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Volume 28 Number 2

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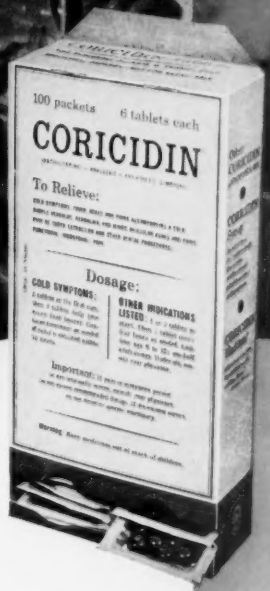

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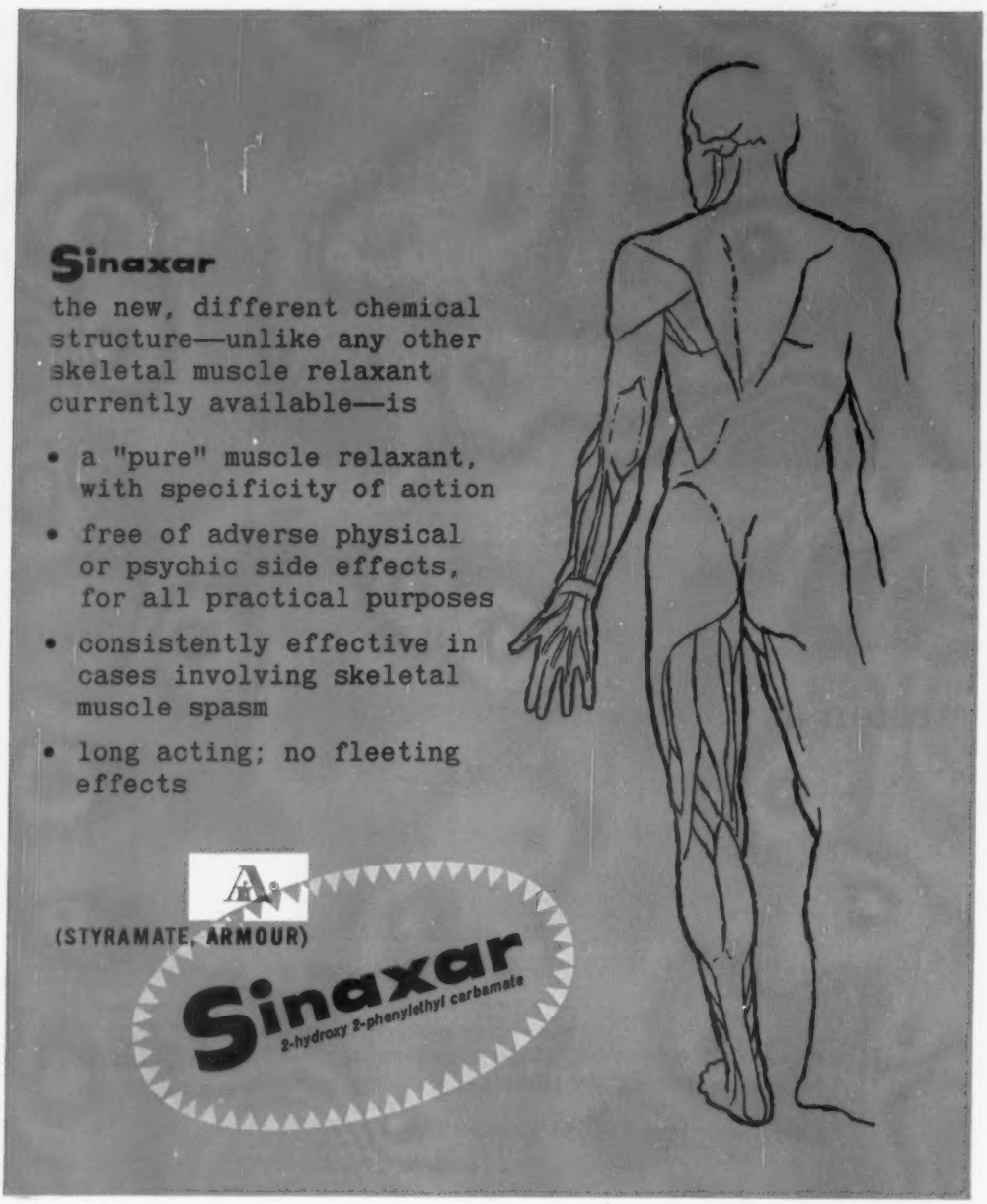
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ESTABLISHED 1932

The International Journal of Medicine in Industry

FEBRUARY, 1959
VOLUME XXVIII
NUMBER 2

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PERSONAL NEWS AND NOTES

C. H. BAYLOR, M.D., has been appointed Medical Director of the Texas Company. He will be in charge of the Health Division of Texaco's Industrial and Public Relations Department, directing the medical programs of the Company and its subsidiaries.

He graduated from Emory and Henry College in 1929 and received his M.D. degree from Johns Hopkins University in 1935. Following service on the house staff of Strong Memorial Hospital in Rochester, N. Y., he became a professor of internal medicine at the American University of Beirut in Lebanon in 1938. He remained in that position until 1949, when he joined Texaco as Assistant Medical Director.

DR. BAYLOR succeeds DR. M. N. NEWQUIST, Medical Director since 1940, who retired from active service on January first.

International Symposium on Maximum Allowable Concentrations of Toxic Substances in Industry will be held in Prague, Czechoslovakia, April 14 to 17, 1959. The Symposium, arranged by the Permanent Committee and International Association on Occupational Health and the International Union of Pure and Applied Chemistry, will treat the following subjects: the investigation of present time definitions and conceptions of maximum allowable concentrations in different countries and evaluation of methods used in different countries for determination and fixing of maximum allowable concentrations; maximum allowable concentrations in biological materials; the evaluation of importance of suitable methods of chemical analyses, physical methods and methods of sampling used in industry. President of the organizing committee is PROFESSOR RENE TRUHAUT of Paris, France. For further information, write PROFESSOR JAR. TEISINGER, Prague II., Karlovo nám 33, Czechoslovakia.

PAUL S. RICHARDS, SR., M.D., eminent Salt Lake City physicians and pioneer in industrial medicine, and WILLARD B. RICHARDS, JR., are the leaders in forming the Richards Memorial Medical Foundation in Salt Lake City to promote medical research — especially in occupational disease and industrial medicine.

One of the first projects of the Foundation will be establishment of a professorship in occupational disease at the University of Utah College of Medicine.

Initial assets of the Foundation include a split level brick clinic building. The clinic is leased to the Memorial Medical Center, a partnership of physicians and surgeons. Foundation officials anticipate that additional cash contributions will be made to further the Foundation's work. The founders said that it is their intention that the Foundation be operated strictly as a nonprofit charitable, scientific and educational organization and that it will grow and develop into one of the outstanding institutions of its kind.

DOCTOR RICHARDS received his M.D. degree from Harvard Medical School, 1920. He practiced medicine at Bingham, Utah for 27 years and established a 35 bed hospital there. He is a member of American College of Surgeons and Industrial Medical Association. He was cofounder of the Memorial Medical Center in 1953.

Note: As this issue goes to press, we are informed of the death of Dr. Paul S. Richards, several days after the Memorial Medical Foundation became a reality.

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ROBERT M. CLYNE, M.D., has been appointed Director of Employee Health for the American Cyanamid Company and its subsidiaries with about 29,000 employees in the United States, Canada and abroad. DR. CLYNE received his M.D. degree from Cornell University Medical School in 1943, interned at Leon Hill Hospital and was resident physician in internal medicine at Lincoln Hospital and the Bronx Veterans Administration Hospital. He is a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians and the American Academy of Occupational Medicine and a member of the Industrial Medical and American Medical Associations.

——From Yonkers, N.Y., *Herald Statesman*, December 6, 1958.

National Health Forum for 1959 at the Palmer House, Chicago, March 17-19, 1959, will have as its theme "The Health of People Who Work — The Challenge of Occupational Health." The annual National Health Forums sponsored by the more than 60 member agencies of the National Health Council enable leaders in health and other organizations to consider together an important problem which requires public and professional attention and action by many groups.

The program in brief: At the opening session of Tuesday morning, March 17, prominent speakers will summarize the occupational health problems as seen by management, labor, and other groups concerned, setting the stage for the 20 panel discussion meetings which will follow.

The Forum dinner will be held on Wednesday evening, March 18. A concluding session on Thursday morning will concentrate discussion on plans for future action.

Questions which will challenge the Forum include:

How can management, labor and the community work together to improve further the health of workers?

What are the responsibilities and opportunities of management and labor, the official and voluntary health agencies, the physician, and the worker himself with regard to the health of workers?

Is any substantial further improvement in occupational health possible until more physicians, nurses and other related personnel become interested in, and receive adequate training in, the field of occupational health?

Is it actually possible to provide an adequate occupational health program in *small* industrial plants, and if so, by what means?

How can the health of non-industrial workers, such as farmers, be safeguarded and improved?

How can progress be furthered in the employment of handicapped workers?

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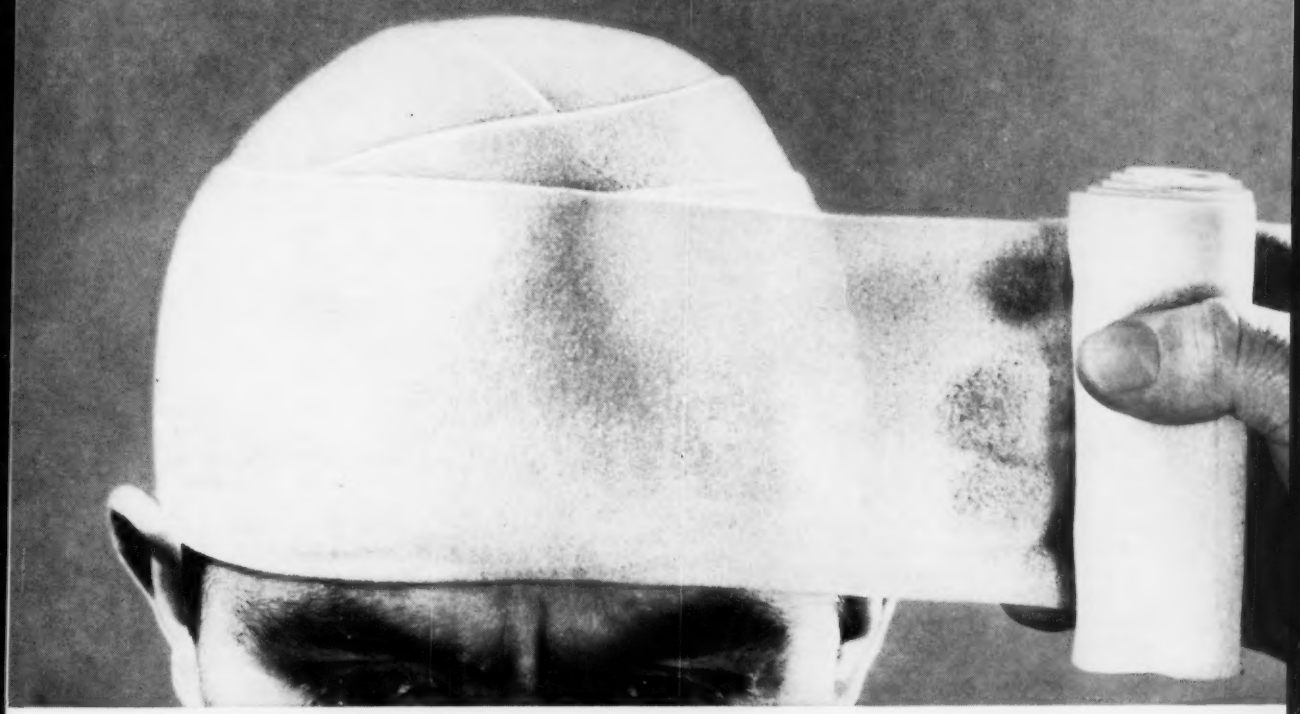

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What are the health implications of new types of industrial processes, such as automation and the use of nuclear energy?

America is a nation of workers. With few exceptions, the health problems of those who work are, in effect, the health problems of the vast majority of our people. The health of the worker is influenced not merely by the immediate environment in which he works, but by the larger physical and social environment in which he spends most of his time.

The 1959 National Health Forum provides an opportunity to focus attention on the health of people who work and to consider together ways to improve the health of workers, the health of their dependents and the health of the communities in which they live.

Many diverse groups have a concern with, and can contribute to, the improvement of the health of people who work: management and labor; official and voluntary health and welfare agencies; professional associations; individual practitioners; insurance organizations; community councils; civic groups, etc. Participants in the Forum will reflect these and related interests as they examine together the problems of occupational health and ways in which to protect and promote the health of America's workers.

AMA Congress on Industrial Health will be held February 16 through 18, 1959, at the Netherland Hilton Hotel, Cincinnati, Ohio. For further details, write DIXON HOLLAND, M.D., Executive Secretary, AMA Council on Industrial Health, 535 North Dearborn, Chicago 10, Illinois.

Yale University announces its Summer School of Alcohol Studies, seventeenth annual session, to be held June 28 to July 23, 1959. This interdisciplinary study of problems of alcohol and alcoholism in society will feature lectures and seminars under the direction of specialists in social sciences, medicine and psychiatry, religion, education and public health. There will also be workshops for physicians, case workers, psychologists, clergymen, nurses, educators, probation, parole and correctional officers, personnel directors and supervisors in industry and

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†Lhotka, F. M.: Illinois M. J. 112:259 (Dec.) 1957. Fabricant, N. D.: E. E. N. T. Monthly 37:460 (July) 1958. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958.

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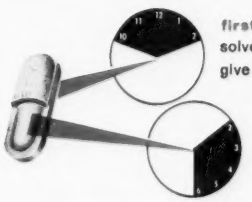

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New York Heart Association, Inc., presented a conference on Heart in Industry, January 27, 1959, at the Waldorf Astoria, New York. EDWIN P. MAYNARD, JR., M.D., Clinical Professor Emeritus, State University of New York, Brooklyn, presided at the morning session, and introductory remarks were by NORMAN PLUMMER, M.D., Medical Director, New York Telephone Company. Speakers were LAWRENCE HINKLE, JR., M.D., Associate Professor of Clinical Medicine, Cornell University Medical College, New York, "The Relation between Life Stress and the Employability of the Cardiac"; HERMAN K. HELLERSTEIN, M.D., Assistant Professor of Medicine, Western Reserve University, Cleveland, Ohio, and Director, Work Evaluation Unit, Cleveland Area Heart Society, "Work Load and Cardiac Function"; S. CHARLES FRANCO, M.D., Associate Medical Director, Consolidated Edison Company, New York, "Periodic Examination in the Detection of Heart Disease"; ROLAND BAXT, Executive Director, Federation Employment and Guidance Service, New York, "The Middle Man Reports—His Experience with the Employer and the Cardiac Job Seeker."

There was a question and answer forum with EDWIN P. MAYNARD, JR., M.D., as Moderator and a panel of LAWRENCE HINKLE, JR., M.D.; S. CHARLES FRANCO, M.D.; HERMAN K. HELLERSTEIN, M.D.; ROLAND BAXT; and JOHN J. THORPE, M.D., Chairman, Committee on Cardiovascular Diseases in Industry, New York Heart Association.

JERE W. LORD, JR., M.D., President, New York Heart Association, presided at luncheon. There was a luncheon address by the Honorable THOMAS E. DEWEY on "Heart Disease and the Government."

IRVING S. WRIGHT, M.D., Professor of Clinical Medicine, Cornell University Medical College, New York, presided at the afternoon session, and there was a workshop, "The Cardiac and His Job As Viewed by:" Cardiologist: OGLESBY PAUL, M.D., Clinical Associate Professor of Medicine, University of Illinois, College of Medicine, Chicago; Cardiologist: HOWARD B. SPRAGUE, M.D., Past President, American Heart Association, Boston; Management: W. H. CRUICKSHANK, M.D., Vice-President and General Manager, Toronto Area, Bell Telephone Company of Canada; Labor: NELSON H. CRUICKSHANK, Director, Social Insurance Activities, American Federation of Labor—Congress of Industrial Organizations, Washington, D.C.; Lawyer: THEODORE C. WATERS, General Counsel, Industrial Hygiene Foundation of America, Inc., Baltimore; and Medical Director: LEO WADE, M.D., Medical Director, Esso Standard Oil Company, New York, and Associate Clinical Professor of Industrial Medicine, Postgraduate Medical School, New York University.

University of Cincinnati Institute of Industrial Health and Department of Ophthalmology announces a course on Eyes in Industry to be held March 9 through 12, 1959, at the College of Medicine, University of Cincinnati. Physicians interested in attending the course should write to the Secretary, Institute of Industrial Health, The Kettering Laboratory, Eden and Bethesda Avenues, Cincinnati, 19, Ohio.

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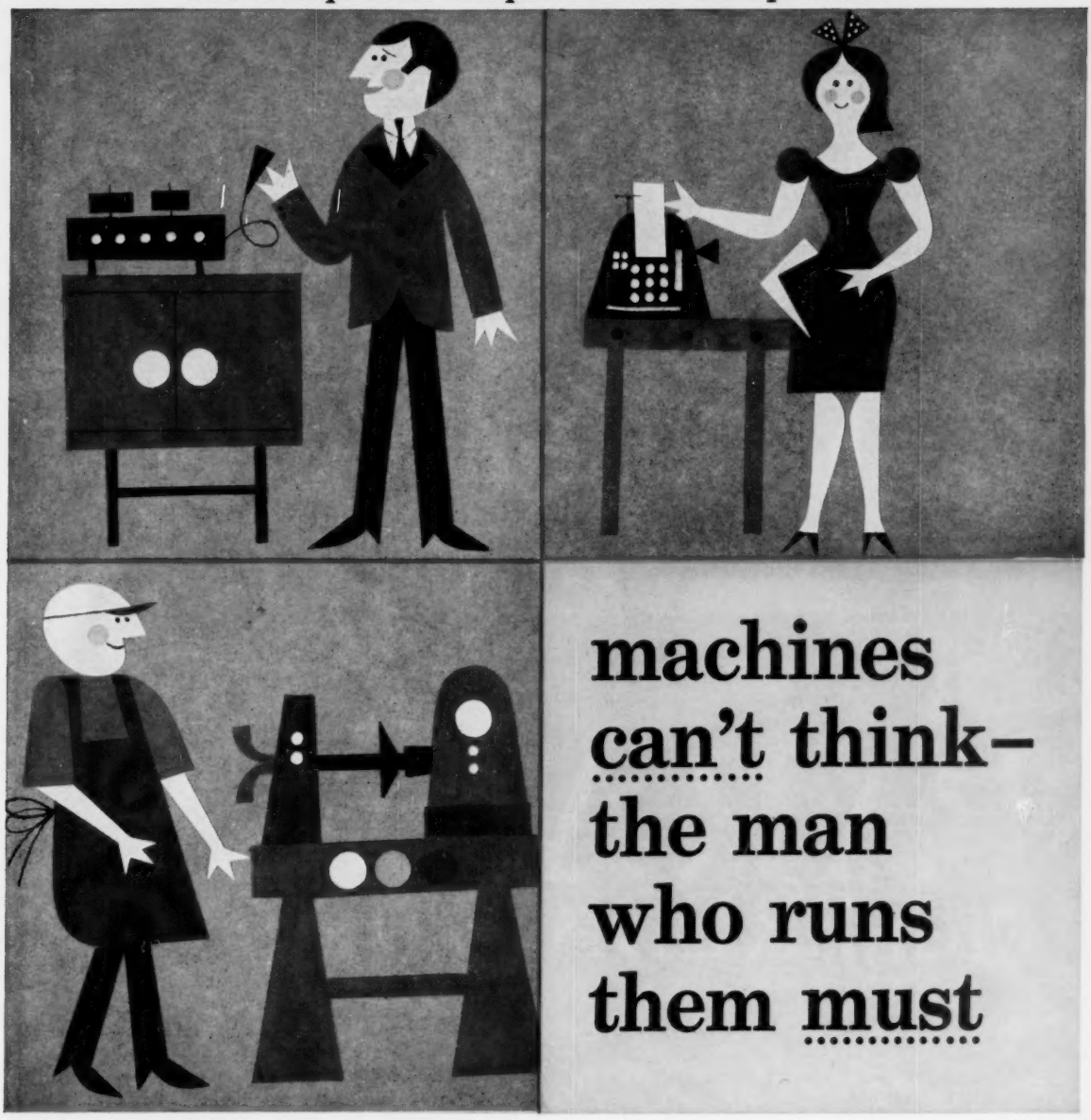

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ATARAX®

(brand of hydroxyzine)

Relieves anxiety without impairing judgment. With ATARAX, the employee being treated for emotional disturbances "retains full consciousness . . . but his reactions have become those of a completely balanced individual."[2]

ATARAX is safe
even in amounts several times the average therapeutic dose.[3]

"is especially well-suited for ambulatory neurotics who must work, drive a car or operate machinery."[1]

Dosage: Adults, one 25 mg. tablet or 1 tbsp. Syrup q.i.d. Children, 1 or 2 10 mg. tablets, or 1 or 2 tsp. Syrup t.i.d.

Supplied: Tiny 10 mg., 25 mg., and 100 mg. tablets, bottles of 100. Syrup, pint bottles. Parenteral Solution, 10 cc. multiple-dose vials.

References: 1. Ayd, F. J., Jr.: New York J. Med. *57*:1742 (May 15) 1957. 2. Bayart, J.: Presented at the International Congress of Pediatrics, Copenhagen, Denmark, July 22-27, 1956. 3. Cohen, S.: Am. Pract. & Digest Treat. *8*:946 (June) 1957.

New York 17, N. Y.
Division, Chas. Pfizer & Co., Inc.
Science for the World's Well-Being

TWO NEW PARAFLEX* PRODUCTS

FOR RHEUMATISM AND TRAUMATIC DISORDERS

PARAFON*

THE SPECIFIC MUSCLE RELAXANT PLUS
THE PREFERRED ANALGESIC

FOR ARTHRITIS

PARAFON* with PREDNISOLONE

Effective and well tolerated on the practical dosage of only 6 tablets daily, PARAFON and PARAFON WITH PREDNISOLONE provide benefits that last for up to six hours.

PARAFON relieves pain, stiffness, and disability caused by rheumatism and traumatic disorders; PARAFON WITH PREDNISOLONE compounds this relief with anti-inflammatory action in treatment for arthritis.

supplied: PARAFON: Tablets, scored, pink, bottles of 50. Each tablet contains: PARAFLEX Chlorzoxazone† 125 mg.; and TYLENOL® Acetaminophen 300 mg.
PARAFON WITH PREDNISOLONE: Tablets, scored, buff colored, bottles of 36. Each tablet contains: PARAFLEX Chlorzoxazone 125 mg.; TYLENOL Acetaminophen 300 mg.; and prednisolone 1.0 mg.

precautions: The precautions and contraindications that apply to all steroids should be kept in mind when prescribing PARAFON WITH PREDNISOLONE.

*TRADE-MARK †U.S. PATENT PENDING

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8884A00

running noses

and open stuffed noses orally

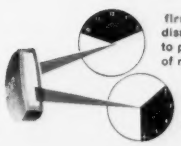
with TRIAMINIC, the oral nasal decongestant

- in nasal and paranasal congestion
- in sinusitis
- in postnasal drip
- in allergic reactions of the upper respiratory tract

safer and more effective than topical medication

- reaches *all* respiratory membranes systemically
- avoids "nose drop addiction"
- presents no problem of rebound congestion
- provides longer-lasting relief

Relief with Triaminic is prompt and prolonged because of this special timed-release action . . . beneficial effect starts in minutes, lasts for hours.


first—the outer layer dissolves within minutes to produce 3 to 4 hours of relief
then—the inner core disintegrates to give 3 to 4 more hours of relief

Each* TRIAMINIC *Tablet provides:

Phenylpropanolamine HCl . . .	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

One-half of this formula is in the outer layer, the other half is in the core.

Dosage: One tablet in the morning, mid-afternoon and in the evening, if needed.

Triaminic®

Also available: For the occasional patient who requires only half dosage: timed-release TRIAMINIC JUVELETS. Each Juvelet is equivalent to ½ of a Triaminic Tablet.

For those patients who prefer liquid medication: TRIAMINIC SYRUP. Each 5 ml. tsp. of this palatable syrup is equivalent to ¼ of a Triaminic Tablet.

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last
immunity
to
poison ivy
and
poison oak

to keep workers "on the job" with

AQUA IVY, AP®

alum-precipitated pyridine-ivy extract suspended in saline solution

During 14 years of extensive trial and use, Clinicians have reported:

AQUA IVY PRODUCED GOOD TO EXCELLENT RESULTS —up to 93% of cases[1-6]

AQUA IVY IS EASILY ADMINISTERED—SLOWLY ABSORBED

"In our experience the alum-precipitated pyridine-ivy suspension in saline solution (Aqua Ivy) is superior to either the alcohol/ether or the oil resorption materials. This is because of the ease of its administration, its concentrated dosage, and its more effective clinical results along with lessened possibility of exacerbations of symptoms. The alum-precipitated material is slowly absorbed . . ."[2]

No pain upon injection which is given subcutaneously with a ¼ inch 26-gauge needle.

AQUA IVY IS NON-TOXIC AND NON-IRRITATING

In 121 cases ". . . no incidence of nephritis or exacerbation of dermatitis . . . even when Aqua Ivy was administered to children as young as 2 years of age."[3]

"All of the patients accepted the outlined schedule without experiencing either local or systemic reactions."[1]

"The alum-precipitated pyridine-ivy product appears to be non-toxic."[2]

No dermatitis secondary to accidental contact of Aqua Ivy with the skin.

How Supplied:

In a combination package containing one 5 cc. vial of a 1:50 dilution (0.3 mg./cc.) and one 10 cc. vial of a 1:5 dilution (3.0 mg./cc.) (administration sufficient for at least 8 patients).

References:

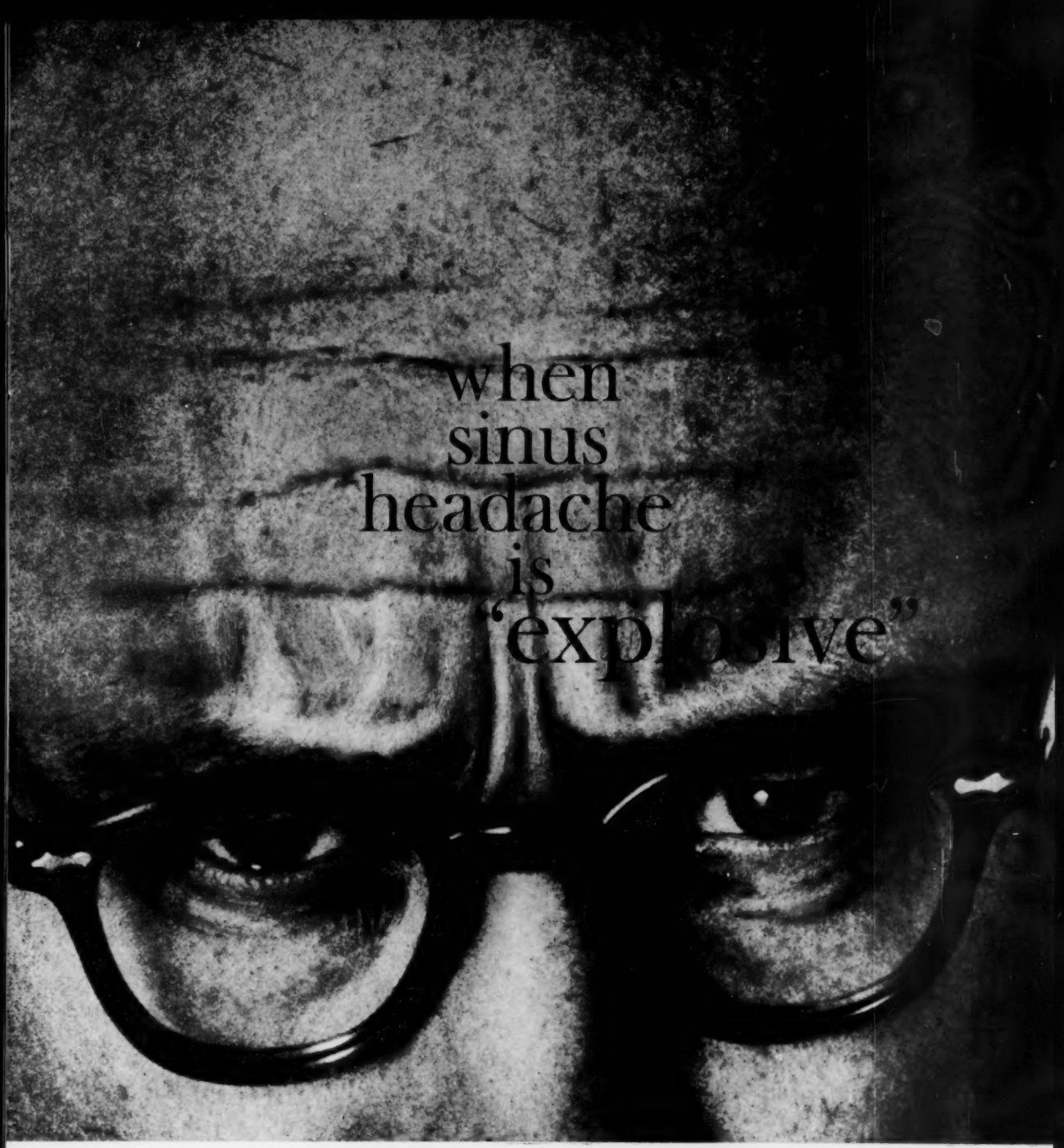
1. Gaillard, G. E.: J. Allergy 21:55, 1950
2. Gaillard, G. E.: New York J. Med. 56:14, 1956
3. Passenger, R. E., Spain, W. C. and Strauss, M. B.: J. Allergy 27:408-422, 1956
4. Neiderff, H. A.: Personal Communication
5. Fontana, V. J.: GP 10:47, 1954
6. Strauss, M. B. and Spain, W. C.: J. Allergy 17:1-10, 1946

Also available as AQUA IVY, AP® TABLETS for oral prophylaxis, in bottles of one hundred tablets of 0.6 mg. each. Each tablet contains 0.6 mg. dry alum precipitated pyridine-ivy.

Literature on request— WRITE TO DEPT. F

SYNTEX CHEMICAL COMPANY, INC.

New York 16, N. Y.



resolve it with NEW **Sinutab***

With a single prescription, Sinutab aborts pain, decongests, relieves pressure and provides mild tranquilizing action to relax the patient. Prescribe Sinutab for your patients with sinus or frontal headache.

DOSAGE: *Adults:* two tablets every four hours; prophylactically, one tablet every four hours. *Children 6 to 12 years:* one-half adult dose. SUPPLIED: Bottles of *30* tablets. SINUTAB FORMULATION: N-acetyl-para-aminophenol (APAP), 150 mg., (2½ gr.); Acetophenetidin, 150 mg., (2½ gr.); Phenylpropanolamine HCl, 25 mg., (⅜ gr.); Phenyltoloxamine Dihydrogen Citrate, 22 mg., (⅓ gr.).

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MORRIS PLAINS, N. J.

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25,000,000 courses of treatment— and NO "resistance" problems

*Conservative estimate based on combined use of all FURACIN preparations since 1948.

FURACIN®

brand of nitrofurazone

In clinical use for more than 12 years and today the most widely prescribed single topical antibacterial, FURACIN—like other nitrofurans—remains effective against pathogens which have developed, or are prone to develop, resistance to other antibacterial agents. There has been no evidence that originally sensitive strains of staphylococci or other bacteria lose their susceptibility to FURACIN in any significant degree.

the wide-spectrum antibacterial exclusively for topical use ... in dosage forms for every topical need

Available as Soluble Dressing, Soluble Powder, or Solution. Also in Vaginal and Urethral Suppositories and in special formulations for eye, ear and nose.

one of the unique nitrofurans— products of Eaton research
Eaton Laboratories, Norwich, New York

2 NEW 'CUT-QUICK' DISPENSERS FOR RACK ROLL ADHESIVE TAPE

Johnson & Johnson

FOR DRESSING CART*

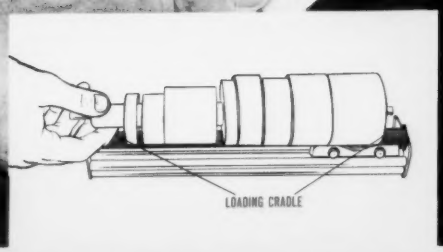
- *Easier to load and re-load . . . unique, built-in "cradle" provides time-saving convenience.*
- *No longer necessary to remove, replace and re-anchor tape rolls when replenishing a finished core.*
- *Cuts all types of tape . . .*
  Cloth, Plastic, and Elastic . . quickly . . smoothly . . quietly
- *Made of highly polished, heavy duty metal, for years of carefree service.*

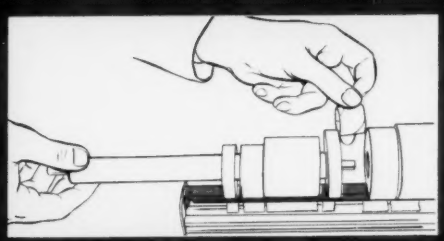
**Also suitable for wall use*

FOR WALL USE

- *Wall model includes all features of dressing-cart type, plus . . . . . .*

  Heavy-duty, white-enameled, hinged metal case, with handy shelf for instruments, bandages and accessories.





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Johnson & Johnson hypo-reactive, surgical tapes combine optimum skin adhesion with the lowest degree of reactivity from any cause!

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HELPING THE HANDS THAT HEAL

P-221

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Privine
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Either way...
relief of stuffy nose
comes fast
PRIVINE® hydrochloride (naphazoline hydrochloride CIBA)

are you interested in a moderate low-fat well-balanced breakfast?

When a moderate reduction of fat in the diet is indicated, a basic cereal and milk breakfast shown in the table below is worth consideration. Not only is the *fat content moderate (10.9 gm.—20 per cent of total calories)*, but this convenient, economical breakfast is *well balanced* as demonstrated by the chart below showing its nutritional contribution to the recommended dietary allowances[1] for "Women, 25 Years." This basic cereal and milk breakfast is well balanced and nutritionally efficient as demonstrated by the Iowa Breakfast Studies.

recommended dietary allowances and the nutritional contribution of a moderate low-fat breakfast*

Menu: Orange Juice—4 oz.;
Cereal, dry weight—1 oz.;
Whole Milk—4 oz.; Sugar—1 teaspoon;
Toast (white, enriched)—2 slices;
Butter—5 gm. (about 1 teaspoon);
Nonfat Milk—8 oz.

Nutrients	Calories	Protein	Calcium	Iron	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid
Totals supplied by Basic Breakfast**	503	20.9 gm.	0.532 gm.	2.7 mg.	588 I.U.	0.46 mg.	0.80 mg.	3 mg.	65.5 mg.
Recommended Dietary[1] Allowances—Women, 25 Years (58 kg.—128 lb.)	2300	58 gm.	0.8 gm.	12 mg.	5000 I.U.	1.2 mg.	1.5 mg.	17 mg.	70 mg.
Percentage Contributed by Basic Breakfast	21.9%	36.0%	66.5%	22.5%	11.8%	38.3%	53.3%	17.6%	93.6%

**Revised 1958. Food and Nutrition Board, National Research Council, Washington, D.C.*

***Cereal Institute, Inc.: Breakfast Source Book. Chicago: Cereal Institute, Inc., 1958.*
Watt, B. K., and Merrill, A. L.: Composition of Foods—Raw, Processed, Prepared. U.S.D.A. Agriculture Handbook No. 8, 1950.

[1]*The allowance levels are intended to cover individual variations among most normal persons as they live in the United States under usual environmental stresses. Calorie allowances apply to individuals usually engaged in moderate physical activity. For office workers or others in sedentary occupations they are excessive. Adjustments must be made for variations in body size, age, physical activity, and environmental temperature.*

CEREAL INSTITUTE, INC.
135 South La Salle Street, Chicago 3

A research and educational endeavor devoted to the betterment of national nutrition

Until the discovery of DECADRON* by MERCK SHARP & DOHME, when your diabetic patients were also in need of corticosteroid treatment, you were often faced with a difficult therapeutic dilemma. Diabetes mellitus was a recognized contraindication to the use of corticosteroids, since they not only aggravated the existing diabetic symptoms, but often precipitated latent diabetes.

NOW EVEN many diabetic patients may have THE FULL BENEFITS OF CORTICOSTEROID THERAPY

DECADRON—the new and most potent of all anti-inflammatory corticosteroids—is remarkable for its **virtual absence of diabetogenic effect** in therapeutic doses.

Decadron*

DEXAMETHASONE

to treat more patients more effectively

In clinical trials with some 1,500 patients glycosuria was noted in only two, transitory glycosuria in another two, and flattening of the glucose tolerance curve in one. There were no instances of aggravation of existing diabetes, no increase in insulin requirements. Patients whose diabetes was severely aggravated on prednisolone showed good tolerance when transferred to DECADRON.

MORE patients can be treated with DECADRON than with other corticosteroids, because in addition to being practically free of diabetogenic activity, therapy with DECADRON is also practically free of sodium retention, potassium depletion, hypertension, edema and psychic disturbances. Cushingoid effects are fewer and milder. DECADRON has not caused any new or "peculiar" reactions, and has produced neither euphoria nor depression, but helps restore a "natural" sense of well-being.

*DECADRON is a trademark of Merck & Co., Inc., ©1958 Merck & Co., Inc.

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DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

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TOPICAL
DIMENSIONS
in

Antiinflammatory
Antipruritic
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Bactericidal
Fungicidal
Protozoacidal
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INCORPORATED IN EXCLUSIVE ACID MANTLE® VEHICLE

pH 5.0

Creme
COR-TAR-QUIN™

ACID MANTLE® · hydrocortisone · stainless tar · diiodohydroxyquinoline

In subacute and chronic dermatoses, "especially where an inflammatory reaction was accompanied by increased scaling and lichenification with secondary infection such as is seen in seborrheic dermatitis, atopic dermatitis, contact dermatitis, and neurodermatitis."

—Rein, C. R., and Fleischmajer, R.: Personal Communication.

Sig: Apply b. i. d.
½ oz., 1 oz., 2 oz., & 4 oz. tubes either 0.5% or 1.0% hydrocortisone.

Samples and literature on request

DOME *Chemicals Inc.*
109 WEST 64 ST., NEW YORK 23, N.Y.
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"COUGH...

one of the most frequent symptoms for which the patient seeks medical attention."[1]

SYNEPHRICOL®

ANTIHISTAMINIC • DECONGESTANT

Cough Syrup

...relieves the cough due to colds
...eases the allergic cough

●

Synephricol acts by prompt and prolonged decongestion of bronchial mucous membranes, by mild central sedation, and by decreasing sensitivity of the pharyngeal mucosa through antihistaminic action.

FORMULA:
(4 cc. teaspoonful)

Neo-Synephrine® hydrochloride	5.0 mg.
Thenfadil® hydrochloride	4.0 mg.
Dihydrocodeinone bitartrate*	1.33 mg.
Potassium guaiacol sulfonate	70.0 mg.
Ammonium chloride	70.0 mg.
Menthol	1.0 mg.
Chloroform	0.0166 cc.
Alcohol	8%

**Exempt narcotic*

DOSAGE:

Adults—1 or 2 teaspoonfuls every two to four hours, not to exceed 5 doses in twenty-four hours.

Children 6 to 12 years—½ to 1 teaspoonful four or five times daily.

BOTTLES OF 1 PINT AND 1 U. S. GALLON.

Winthrop LABORATORIES
NEW YORK 18, N.Y. • WINDSOR, ONT.

1. Banyai, A. L.: Management of Cough in Daily Practice. J.A.M.A., 148:501, Feb. 16, 1952.

Synephricol, Neo-Synephrine (brand of phenylephrine) and Thenfadil (brand of thenyldiamine), trademarks reg. U.S. Pat. Off.

HEAVY METAL POISONING
is still a Formidable Threat

...but now Calcium Disodium VERSENATE provides a dependably effective means of removing lead and other heavy metals from the body...and *without danger of organ damage.* Calcium Disodium VERSENATE is available in both oral and intravenous preparations; the intravenous form for safe, effective, dramatic short-term treatment; the oral form for convenient prevention of exacerbations or as sole therapy for milder types of lead poisoning.

NOW IN 2 DOSAGE FORMS

INTRAVENOUS—Complete instructions for dilution and administration accompany the ampuls. The average daily dose for an adult is 1 to 2 Gm. per day, given as two infusions. For children, the dose is not more than 0.5 Gm. per 35 pounds of body weight, given once or twice daily. Boxes of six 5 cc. (1 Gm.) ampuls.

ORAL—Average adult dose is 8 tablets (4 Gm.) per day, in divided doses. For children, the dose is adjusted on the basis of 2 tablets (1 Gm.) per 35 pounds of body weight daily, in divided doses. For ease of administration tablets may be crushed and dissolved in milk. In bottles of 250 tablets, each containing 500 mg.

Write for descriptive literature.

Calcium Disodium **VERSENATE***

spells the answer

*Trademark of Dow Chemical Co.

Riker NORTHRIDGE, CALIFORNIA

in peptic ulcer

Milpath*

Miltown® + *anticholinergic*

Milpath acts quickly to suppress hypermotility, hypersecretion and spasm, and to allay anxiety and tension. The loginess, dry mouth and blurred vision so characteristic of some barbiturate-belladonna combinations are minimal with Milpath.

Formula: each scored tablet contains: meprobamate 400 mg., tridihexethyl chloride 25 mg.†

Dosage: 1 tablet t.i.d. with meals and 2 tablets at bedtime.

WALLACE LABORATORIES
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†Formerly supplied as the iodide.

The great operatic works of Rossini have been enjoyed by millions for many decades

THINGS THAT ENDURE

Good things endure . . . a work of art, a literary classic, a proud bridge . . . a dependable pharmaceutical. Such is **Desitin Ointment**. For over 35 years Desitin Ointment has endured as an incomparable, safe, soothing, healing application in wounds, burns, external ulcers and other skin injuries.

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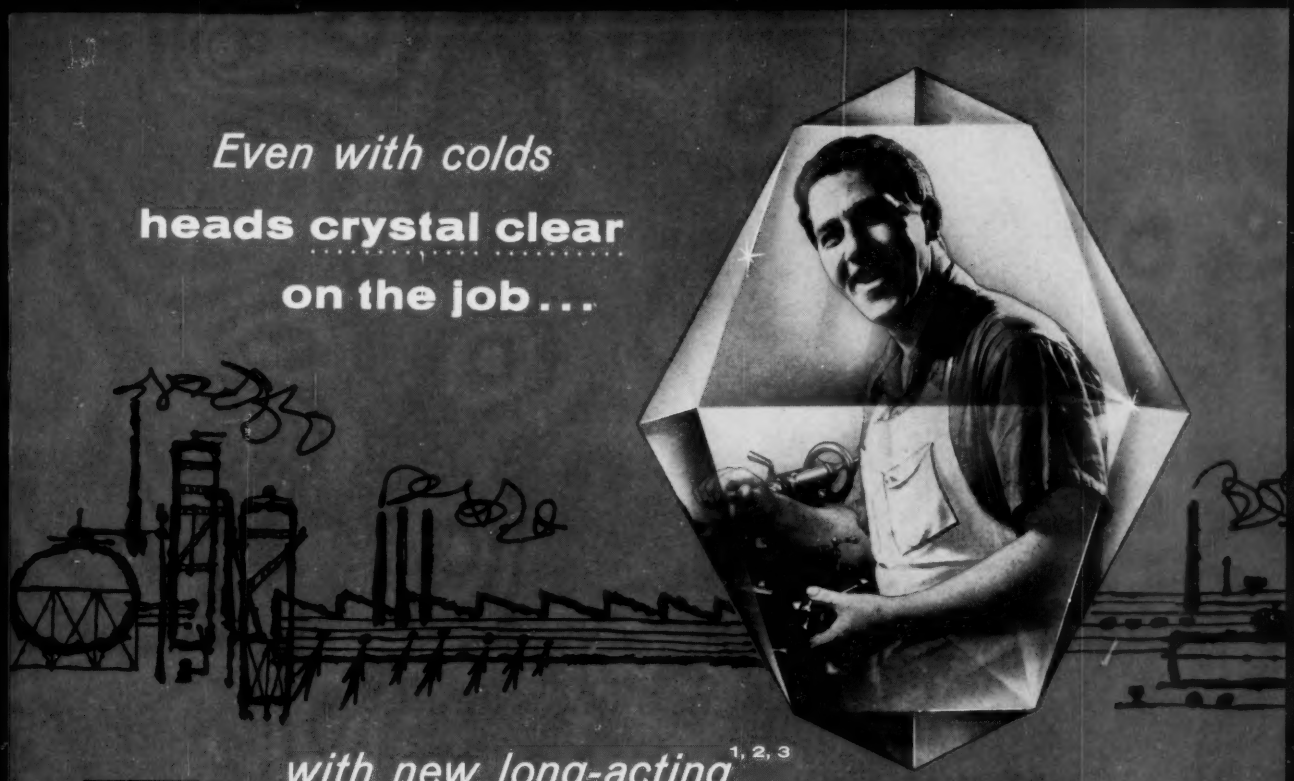

with new long-acting[1, 2, 3]

Rynatan®

Keeps heads clear 10-12 hours with a single oral dose with remarkable lack of side effects[1, 2]

DURABOND oral repository

DURABOND A new principle in medicine that controls absorption rather than dissolution or release, independently of gastrointestinal motility or specific pH. Maintains constant rather than sporadic blood levels, hence no over-release or under-release. This gives smooth therapeutic results, rare incidence of side effects.

RYNATAN TABULES for adults and older children

Rynatan contains:	Each tabule
Phenylephrine tannate	25.0 mg.
Prophenpyridamine tannate	37.5 mg.
Pyrilamine tannate	37.5 mg.

Dose: Tabules 1-2, every 12 hours . . . before work and at bedtime.

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Available in Canada through
Lakeside Laboratories (Canada) Ltd., Toronto

Reduce absenteeism and inefficiency due to miseries of a cold, with Rynatan . . .

The first long-acting, oral, nasal and sinus decongestant—almost completely free from drowsiness and other side effects: ". . . of 311 patients, incidence of side effects was only 2.2 per cent. Evidence of sedation was (only) 1.2 per cent."[4]

Chemically and physically different. Employs no layers, enteric coatings, pellets, waxes or resins. Sustained action is built right into the molecule—with the Durabond principle.

1. Lawler, E.G. and Limperis, N. M.: Clin. Med. (Dec.) 1958. 2. Medical Science 3:376-377 (Mar. 25) 1958. 3. Cavallito, C.J. and Jewell, R.: J. Am. Pharm. A. (Scient. Ed.) 47:165-168, 1958. 4. Antibiotic Med. & Clin. Therapy 5:578-581 (Sept.) 1958.

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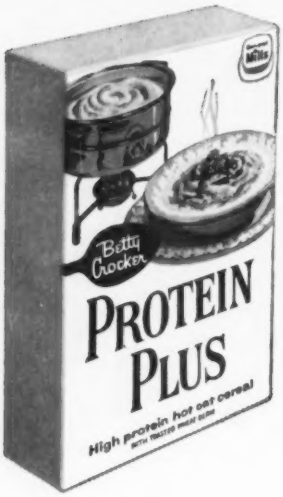
High Quality Protein
For Betty Crocker's
New Hot Cereal..

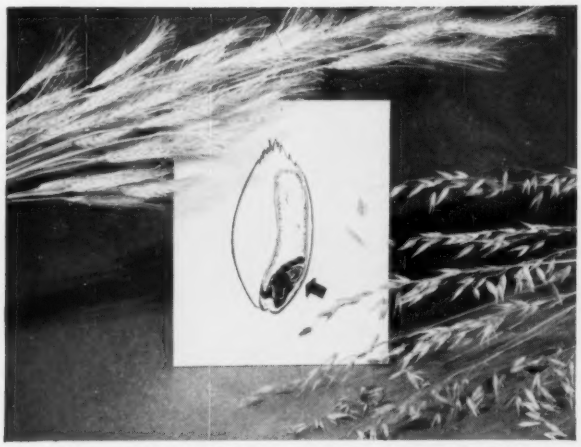
PROTEIN PLUS



When we have real news in the nutrition field, naturally we want the home economists of America to be sure to hear about it. Because you, perhaps more than any other group of people, influence the eating habits of the growing generation; teach them sound dietary principles; point to the foods which fullfil the requirements of these principles. And a well-known nutritionist has said that better nutrition during the first half of life will make for better health during the last half.

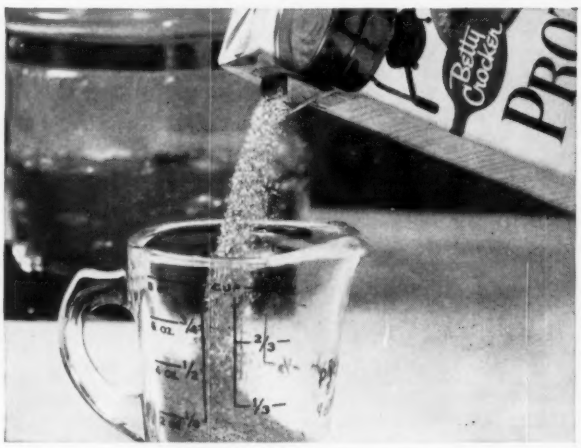
Protein Plus was developed by General Mills in response to a nutritional need. The need for a nourishing, protein-rich breakfast in America today is well-known. For this we have already created our ready-to-eat cereal, Hi-Pro. But many people, especially mothers, feel that a hot cereal is better for their families in cold weather. After months of research, *Protein Plus* is the result. Wherever it has been introduced it has met with a warm response. For you who are experts in the field . . . here is the background and scientific fact about our new hot cereal.

General Mills



1. *Protein Plus* is high quality protein cereal from toasted wheat germ and high protein fractions of the oat berry.

4. *Protein Plus has high quality protein* according to nutritionists. The animal protein necessary for well-rounded protein intake is supplied by the milk you add.



7. *De luxe Packaging* . . . with a handy pouring spout that's so easy to use. There's real General Mills quality in this well-built box, beautifully designed and styled for today's family-living kitchens.

2. *General Mills Cereal Engineers* learned by careful experiments, how to select and isolate high protein fractions from the oat milling process to give Protein Plus a high concentration of this vital food element.

3. *Flavor is important* and scientists devoted much time to ensuring toasty richness while still maintaining vitamin and protein quality. General Mills taste-testers worked with them every step of the way. Result: a delicious, distinctive roasted-nut flavor.

PROTEIN PLUS

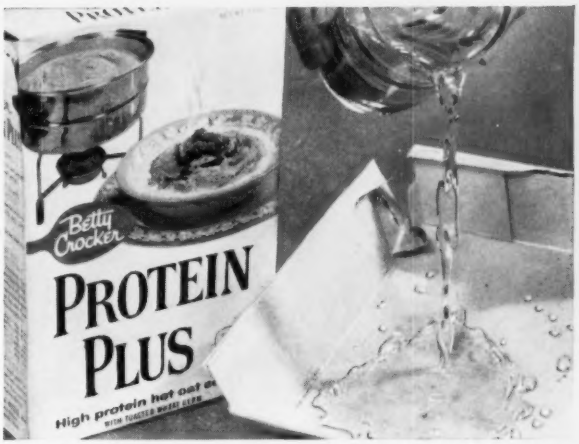
1 Oz. (without milk)

	Amount	% of Min. Daily Req.
Thiamine (Vitamin B_1)	.30 Mg	30%
Riboflavin (a B Vitamin)	.05 Mg	4%
Niacin (a B Vitamin)	.40 Mg	4%
Calcium	19.0 Mg	2.5%
Phosphorous	170.0 Mg	22%
Iron	2.0 Mg	20%

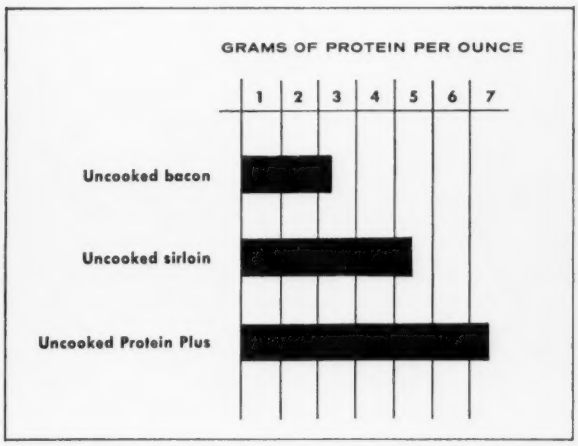
1 Oz. Protein Plus (with 2 oz. milk)

Thiamine (Vitamin B_1)	.32 Mg	32%
Riboflavin (a B Vitamin)	.15 Mg	12.4%
Niacin (a B Vitamin)	.48 Mg	4.8%
Calcium	69.0 Mg	11.8%
Phosphorous	225.0 Mg	27.6%
Iron	2.05 Mg	20.5%

5. *Vitamins and minerals, too . . .* Protein Plus is a good source of thiamine, phosphorus and iron.



6. *Packaged to maintain quality, flavor:* new moisture-proof lining to the Protein Plus box keeps it in top condition on the shelf. The homemaker can buy the large size with complete confidence.



8. *Here's how much protein,* ounce for ounce, in Protein Plus, as compared even with meat products.

9. *Many nutritional experts feel* most people today need more protein at breakfast. Protein Plus sustains you right through till lunchtime, and is an *inexpensive* way to obtain additional protein at a meal where protein intake is often low.

KENACORT

SQUIBB TRIAMCINOLONE

for all your patients starting on corticoids

Kenacort safely starts your patients off right — with all the benefits of systemic corticosteroid therapy and few side effects to worry about. Increased corticoid activity is provided on a low dosage schedule[1-3] without edema,[1-4] psychic stimulation,[1-3] or adverse effect on blood pressure.[1-3,5] A low sodium diet is not necessary.[4,5] Gastrointestinal disturbances are negligible[2,4,5] with less chance of peptic ulcer.[4] This makes Kenacort particularly valuable in treating your "problem patients" — such as the obese or hypertensive and the emotionally disturbed.

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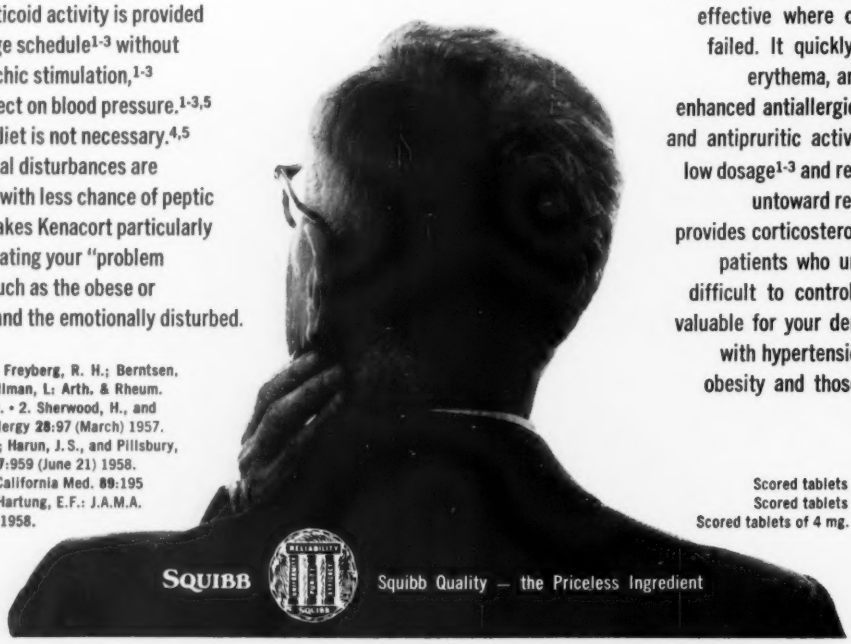

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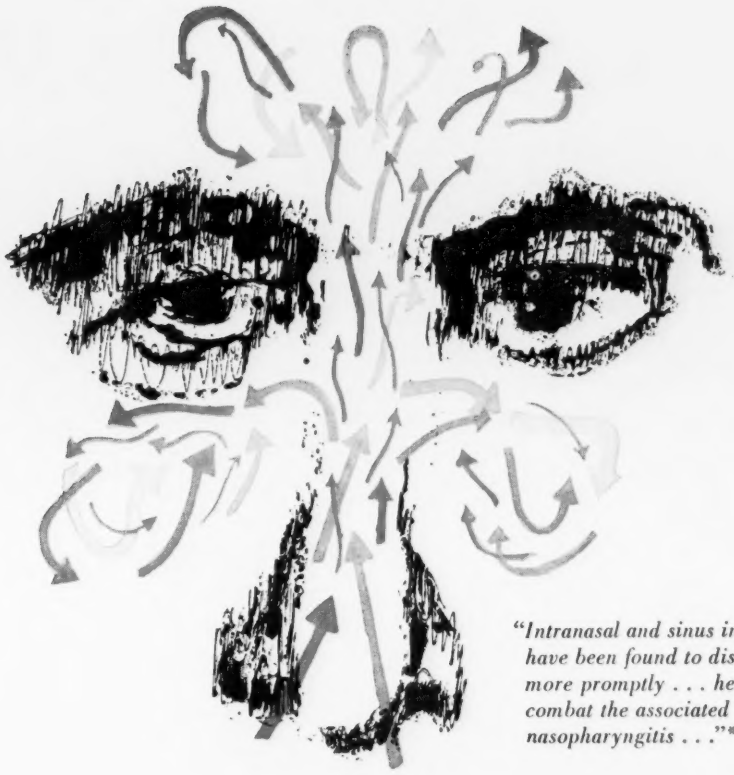

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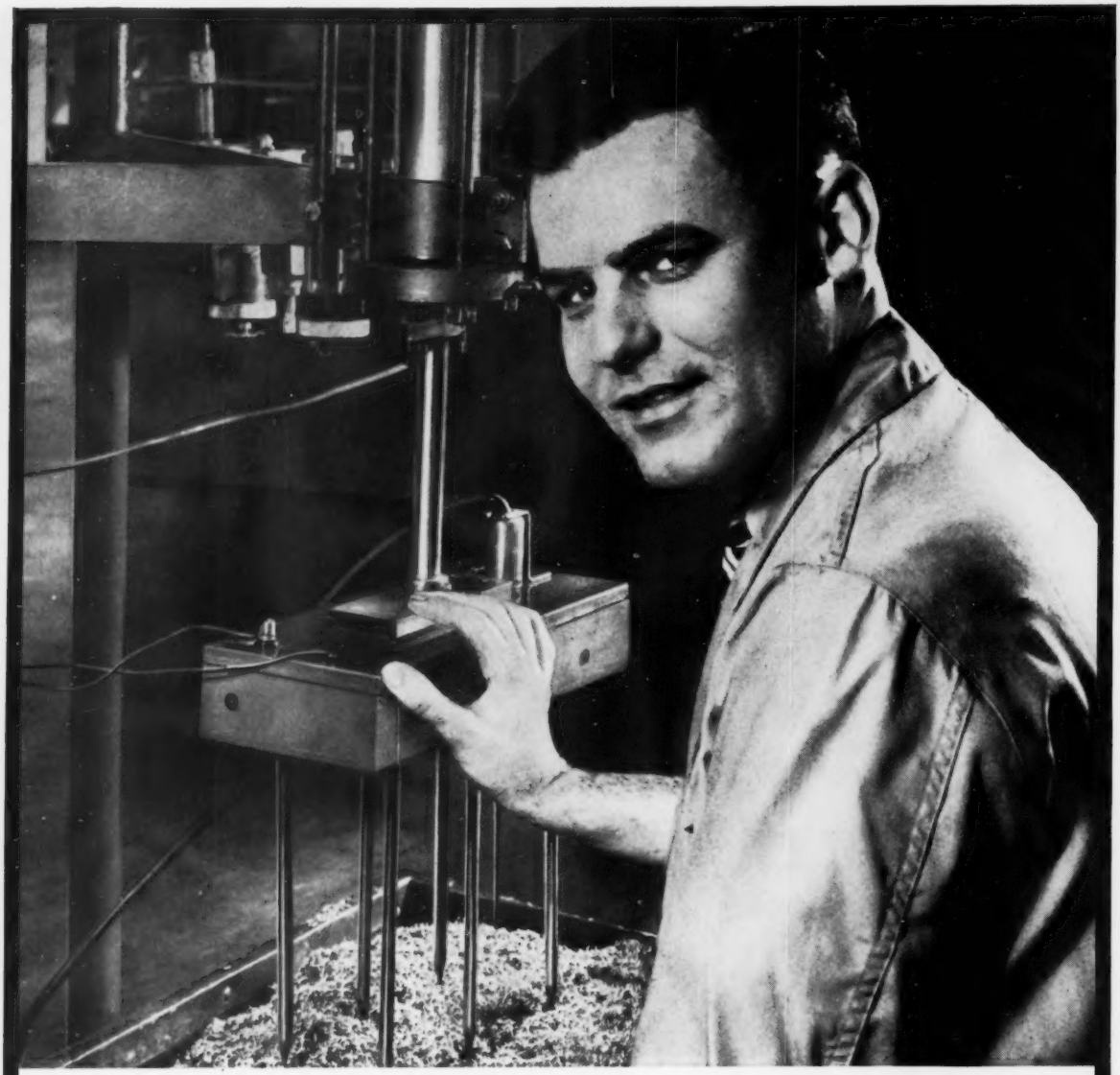

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PUBLISHED REFERENCES: 1. Carpenter, E. B.: Southern Medical Journal 51:627, 1958. 2. Forsyth, H. F.: J.A.M.A. 167:163, 1958. 3. Little, J. M., and Truitt, E. B., Jr.: J. Pharm. & Exper. Therap. 119:161, 1957. 4. Morgan, A. M., Truitt, E. B., Jr., and Little, J. M.: J. Am. Pharm. Assn., Sci. Ed. 46:374, 1957. 5. O'Doherty, D. S., and Shields, C. D.: J.A.M.A. 167:160, 1958. 6. Park, H. W.: J.A.M.A. 167:168, 1958. 7. Truitt, E. B., Jr., and Patterson, R. B., Proc. Soc. Exper. Bio. & Med. 93:422, 1957. 8. Truitt, E. B., Jr., Patterson, R. B., Morgan, A. M., and Little, J. M.: J. Pharm. & Exper. Therap. 119:189, 1957.

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		"marked"	moderate	slight	none
STUDY 1[1]					
Skeletal muscle spasm secondary to acute trauma	33	26	6	1	—
STUDY 2[2]		"pronounced"			
Herniated disc	39	25	13	—	1
Ligamentous strains	8	4	4	—	—
Torticollis	3	3	—	—	—
Whiplash injury	3	2	1	—	—
Contusions, fractures, and muscle soreness due to accidents	5	3	2	—	—
STUDY 3[5]		"excellent"			
Herniated disc	8	6	2	—	—
Acute fibromyositis	8	8	—	—	—
Torticollis	1	—	—	1	—
STUDY 4[6]		"significant"			
Pyramidal tract and acute myalgic disorders	30	27	—	2	1
TOTALS	138	104 (75.3%)	28 (20.3%)	4	2

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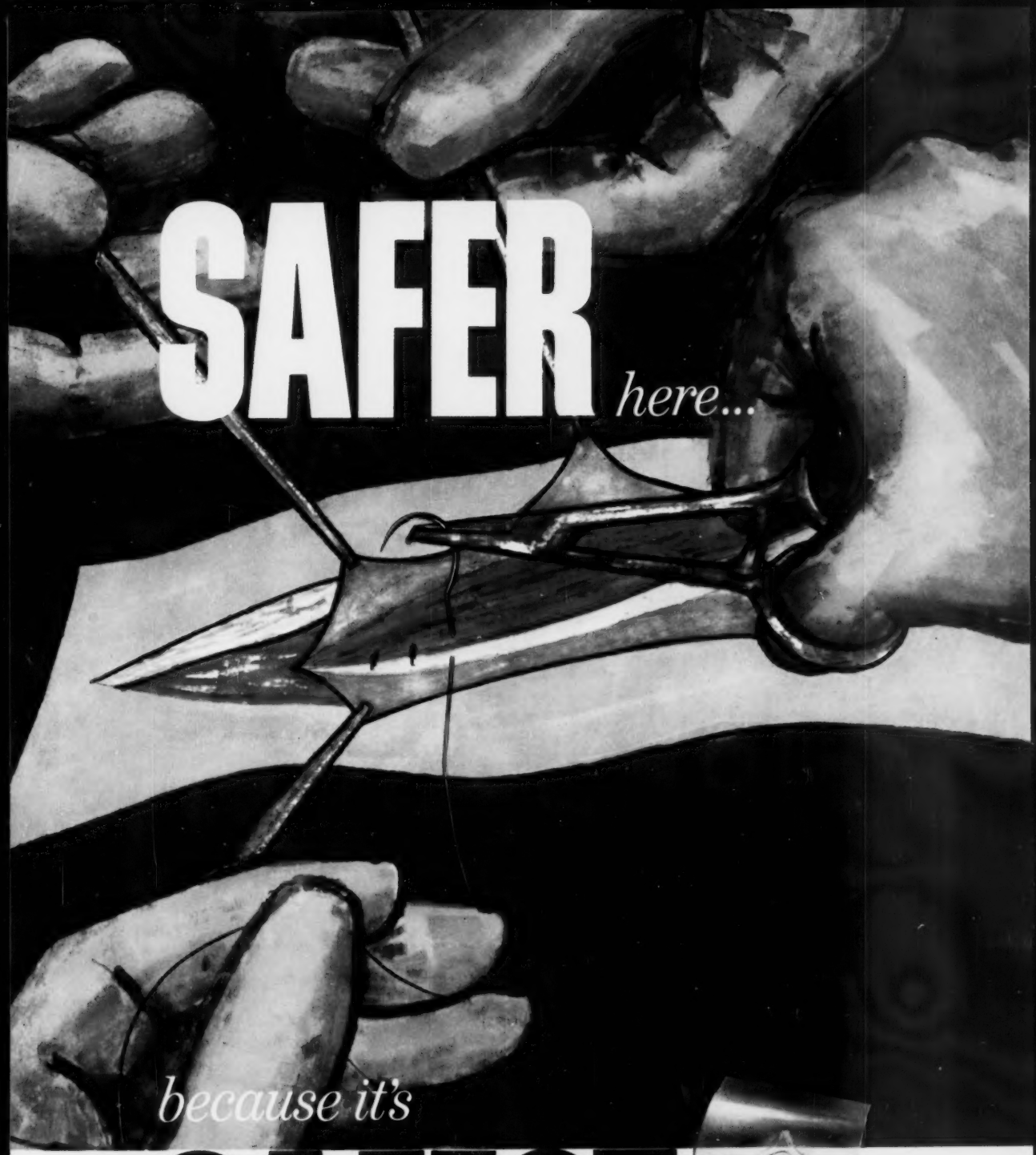

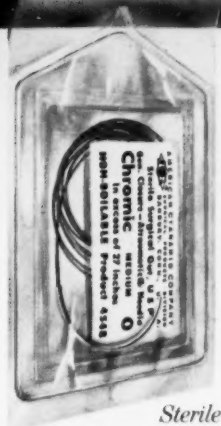

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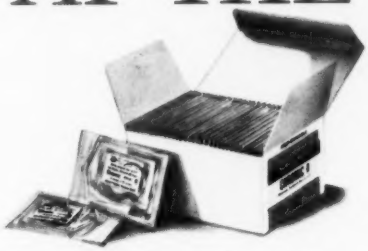

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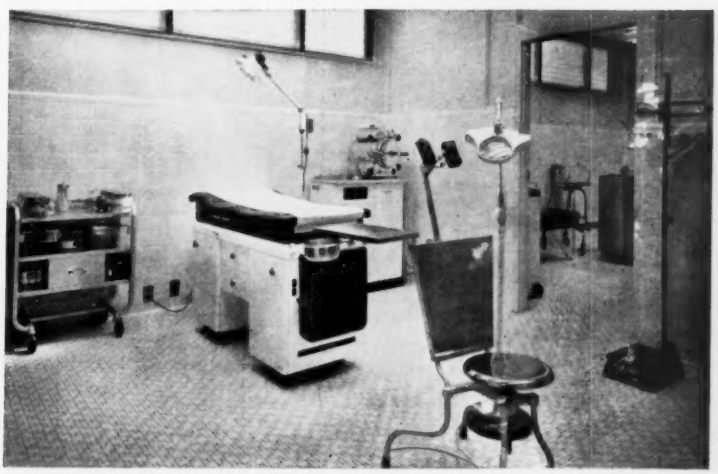

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Physicians turn to Tessalon® to control cough

Single agent with multiple actions broadens cough therapy

A single therapeutic agent developed by CIBA research now does all that has been attempted with combination cough remedies. Extensive clinical trials, in this country and abroad, involving more than 3,000 patients with acute or chronic cough, show that TESSALON *has at least six advantages* that result in the better total management of the patient with cough:

1. TESSALON acts peripherally, to control cough where cough begins—in the chest.
2. TESSALON acts centrally, to control cough at the level of the "cough center" in vagal nuclei in the medulla.
3. TESSALON thins sputum.[1]
4. TESSALON increases vital capacity and ventilation.
5. TESSALON improves exercise tolerance.
6. TESSALON relieves dyspnea, wheezing, "blackouts."

Fewer coughs per minute

Shane and co-workers,[2] using the method of Bickerman and Barach,[3] induced measurable cough in 20 volunteers; a 15 per cent citric acid aerosol was used as the cough-producing agent and each volunteer was tested on three different occasions. The antitussive efficacy of TESSALON (100 mg.) was estimated to be 2½ times that of codeine (½ grain) in this test.

Cough suppressing activity of TESSALON[2]

	Average number of coughs*
No therapy	8.3
Codeine	4.4
TESSALON	1.7

*Based on 5-minute interval immediately following inhalation of citric acid to induce cough. Each patient underwent this test on three separate occasions.

Controls cough in the chest

It has been shown that the increased sensitivity of the sensory receptors in the lung during inspiration is an important part of the cough mechanism. TESSALON has a selective inhibiting effect on these dilation or "stretch" receptors[4] that helps to control cough where cough begins—at points of irritation in the chest.

Controls cough at the cough center in the medulla

Spinal reflex arcs were studied for the inhibitory effect of TESSALON on the transfer of afferent cough impulses to the efferent branch of the cough reflex.[5] TESSALON inhibited reflex transmission, when the afferent nerve was stimulated electrically. With this "damping" effect on the cough center in the medulla, TESSALON controls cough centrally, as well as peripherally.

Thins sputum

TESSALON controls cough frequency without interfering with productivity or expectoration. In fact, sputum is usually thinner, easier to raise.[1]

Effect of TESSALON on sputum[1]

Amount		Consistency	
Less	32 patients	Heavier	3 patients
More	2* patients	Lighter	27 patients
Same	16 patients	Same	20 patients

*These patients noted more but lighter sputum.

Increases vital capacity

Respiration usually increases both in depth and volume during TESSALON treatment.[6] In one study,[7] patients with chronic respiratory disease, with and without bronchospasm, showed a mean increase of 19.7 per cent in vital capacity after a 2-week course of TESSALON.

Improves exercise tolerance

By inhibiting stretch receptor activity, and by increasing air intake, TESSALON enables patients to tolerate exercise or work better, eliminates many paroxysms of coughing.

Relieves dyspnea

Farber and Wilson[8] note that one of the important contributions of TESSALON to cough therapy is "... its action as a reliever of dyspnea in some patients." Shortness of breath, wheezing, "blackouts" are not likely to trouble the patient treated with TESSALON.

Fast, prolonged action

The cough suppressant effect of TESSALON starts rapidly — usually within 15 to 20 minutes. The duration of the antitussive effect is prolonged — usually from 3 to 8 hours.

Indications

TESSALON is indicated in acute and chronic cough.

ACUTE: Common cold • Bronchitis • Pneumonia • Upper respiratory infection • Pleurisy • Spontaneous pneumothorax • Bronchial irritation provoked by gases and foreign bodies

CHRONIC: Pulmonary emphysema • Bronchitis (emphysematous, asthmatic) • Bronchial asthma • Tuberculosis • Other chronic pulmonary diseases • Pulmonary or mediastinal tumors

PROCEDURES: Bronchoscopy and bronchography • Thoracentesis • Thoracic surgery

Dosage

ADULTS: Average dosage is one Perle (100 mg.) t.i.d. If necessary, or where cough is refractory, up to 6 Perles (600 mg.) daily may be given.

CHILDREN UNDER 10: One Pediatric Perle (50 mg.) t.i.d. is the usual dosage.

The Perles should be swallowed without chewing, and, if necessary, with a liquid. Release of TESSALON from the Perle in the mouth produces a temporary local anesthesia of the oral mucosa.

Side Effects

TESSALON is well tolerated. Only occasionally have side effects been reported. Skin rash, nasal congestion and a vague "chilly" sensation have been mentioned. In rare instances, gastrointestinal upset, constipation or sedation have been observed. No adverse effects on respiration, kidney or liver function tests, blood count or urinalysis were reported.

Supplied

Perle form (liquid-filled gelatin spheres) provides speed of liquid medication — convenience and dosage accuracy of capsule medication. Available in two strengths: 100-mg. Perles (yellow), for adult use; 50-mg. Perles (red), for children under 10.

Samples available on request.

References

1. Simon, S. W.: Ann. Allergy 15:521 (Sept.-Oct.) 1957. 2. Shane, S. J., Krzyski, T. K., and Copp, S. E.: Canad. M.A.J. 77:660 (Sept. 15) 1957. 3. Bickerman, H. A., and Barach, A. L.: Am. J. M. Sc. 228:156 (Aug.) 1954. 4. Bein, H. J., and Bucher, K.: Helvet physiol et pharmacol. acta 15:55 (March) 1957. 5. Meier, R., and Bein, H. J.: Personal communication. 6. Michelson, A. L., and Schiller, I. W.: J. Allergy 28:514 (Nov.) 1957. 7. Bickerman, H. A.: To be published. 8. Farber, S. M., and Wilson, R. H. L.: To be published.

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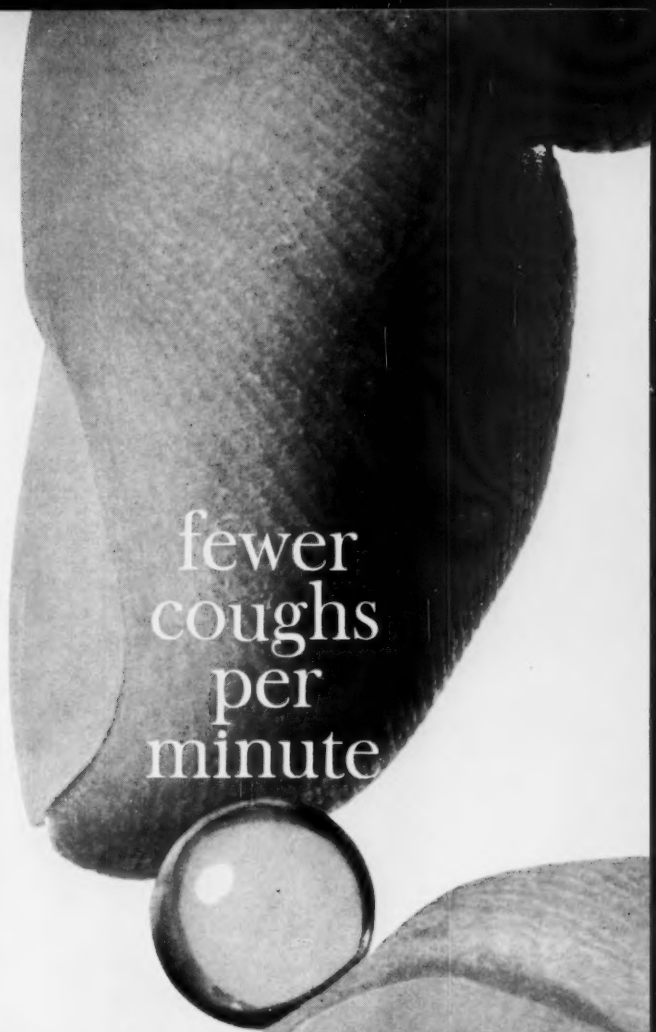

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Controls cough where cough begins—in the chest.

Controls cough at the cough reflex center—in the medulla.

Thins sputum.

Increases vital capacity and ventilation.

Improves exercise tolerance.

Relieves dyspnea.

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1. Griffith, R. S., *et al.*: Antibiotic Med. & Clin. Therapy, *5*:609 (October), 1958. Note: Peak levels with the oral erythromycin tablets (thirty-three dilutions) were not observed until four hours after administration. 2. Data from Griffith, R. S.: Antibiotics Annual, p. 269, 1954-1955.

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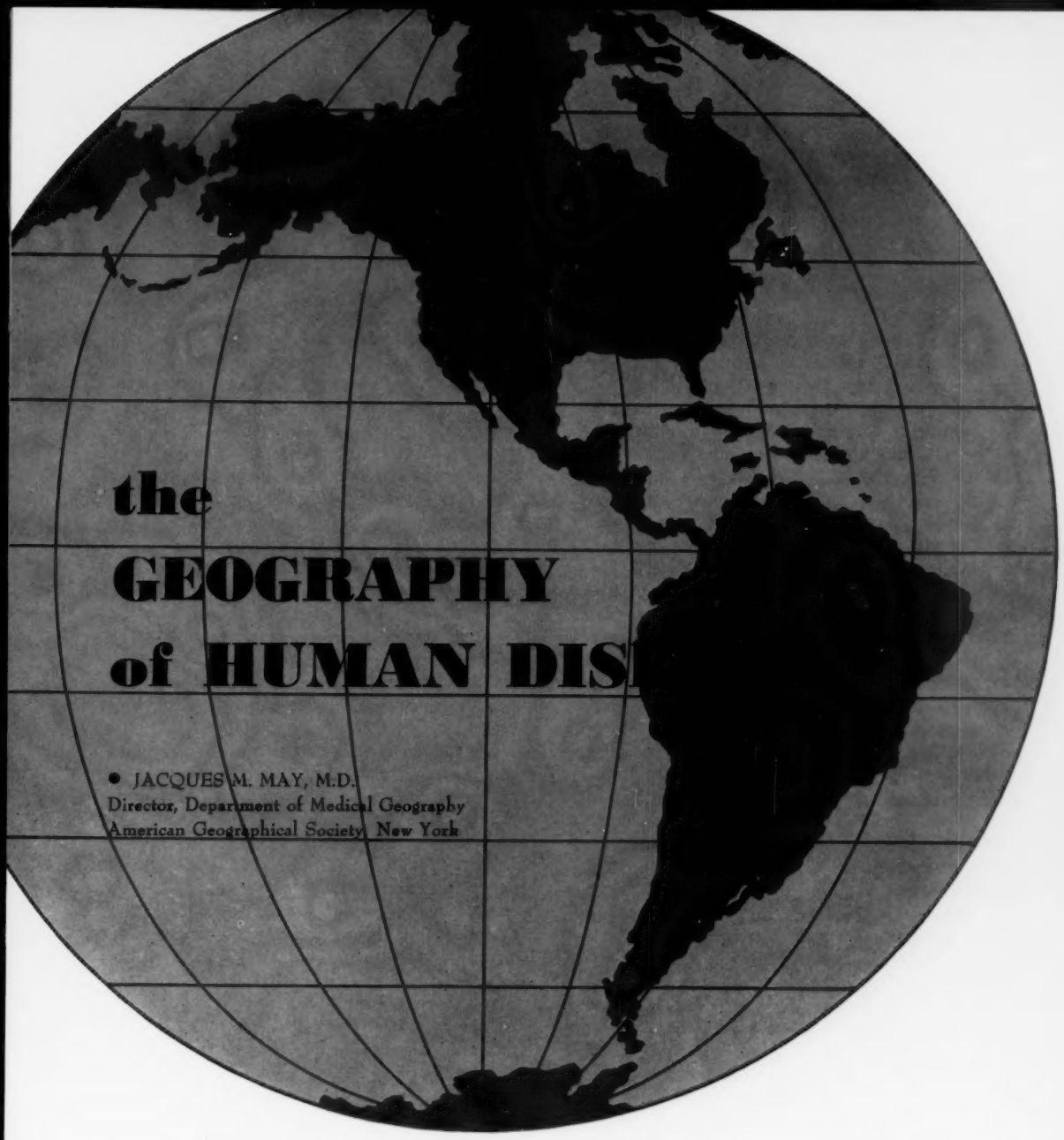

the GEOGRAPHY of HUMAN DIS

• JACQUES M. MAY, M.D.
Director, Department of Medical Geography
American Geographical Society, New York

Man's interest in the geography of diseases is as old as his interest in disease itself. But for a long time it was like the weather; everybody was interested in it but nobody could do much about it. Now, thanks to modern technology, the diagnoses on which geographical patterns of diseases are based have become more secure, and the geography of disease is now a disciplined academic study.

Until recently, textbooks of human and animal disease have given only lip service to the problem of disease distribution. A German scholar by the name of Hirsch published the first modern textbook on the geography of diseases in 1883. This was rather unsatisfactory because it consisted chiefly of an enumeration of countries where certain diseases were said to have occurred. In 1952 there was an attempt to revive the International Society for Geographic Pathology that had been created in Geneva in 1932 by Askanazy. It turned out that the philosophy behind this so-called modern approach to the geography of disease was the same as Hirsch's, that is, something geographical is thought to be known about infectious hepatitis when a gentleman in Canberra, Australia, and another one in Halifax, Nova Scotia, publish their views on the clinical signs of the malady.

One seldom finds an attempt to explain the reasons for some geographical patterns that have amazing features. For example, the complete absence of yellow fever in Asia, when it is common in America and in Africa, is still not understood. Many other intriguing problems of disease distribution have been by-passed as a result of a too exclusively curative approach to medicine, best illustrated by what the author calls the "one ill, one pill, one bill" philosophy of disease. Underlying a disease pattern there are at play a number of forces that must be explored, and it is the exploration of these forces that is the main subject of the study of disease geography, or rather, of the ecology of human diseases. This applies to transmissible diseases, to degenerative disease, and also to behavioral diseases, not only to the diseases of that animal called Homo sapiens, but to the diseases of all other animals as well.

What could be the methodology to approach this study of the geography of human diseases?

Here some definitions will be necessary to make clear what the author has in mind. First, what is disease? For the purpose of the study of geography of disease, one can define disease as that alteration of living tissues that jeopardizes their survival in a given environment. There is a lot to be said for that definition because it introduces into the definition of disease the notion of environment and also the notion of survival. One can say that a disease of man or of an animal is a maladjustment. It is an inability of a living thing to survive in a given environment, and medicine is the art of improving or healing this condition of the tissues and allowing adjustment in the environment.

Now, how does this maladjustment occur? What is the mechanism and how is it related to geography? It can be summed up as follows: no disease ever occurs without a stimulus from the environment and a response from the tissue. This is true of the transmissible, the degenerative and also the behavioral diseases. The basic concept is that disease in individuals and in populations, human or animal, occurs only when stimuli from the environment elicit responses from the host. The stimuli are easily demonstrable to be geographical in nature and to vary region by region. Responses, of course, are under the control of the genetic forces, about which so far little is known. The point here will be to show that the genetic forces also are much conditioned by the geographical environment, which means that the two ends of this equation that creates the disease pattern are both conditioned by the environment. In between the environmental stimuli and the response of the living tissues stands, as far as man is concerned and perhaps also as far as animals are concerned, what is called culture, which either brings together the stimulus and the host or keeps them apart.

Consideration will be given first to the stimuli. These stimuli that may create maladjusted responses can, for the convenience of the discussion, be classified as physical, biological and social-economic. The physical stimuli are obvious: temperature, humidity, wind, nature of the soil and so forth. There has been a lot of folklore about such things since the time of Hippocrates, and little actually is known about the value and importance of these physical factors in human disease. Dr. Douglas Lee, formerly of Johns Hopkins and now with the Quartermaster General, claims that actually nothing is known about it, for the good reason that when one speaks of the effect of climate on a host, one is unable to dissociate the effects of climate, per se, from the effects of the many living things in the climate.

Attempts have been made to determine what the climatic factors did to living organisms by creating artificial climates in a chamber. If one designates temperature as the ordinate and humidity as the abscissa, one can reproduce in a chamber and on a chart the climate of, say, Rio de Janeiro. If one puts people into that artificial climate, it is found that there is an area of temperature below and above which the discomfort increases. The physiological transformations that occur in the living tissues to account for this discomfort are unknown. Still less is known about other stimuli which are coming into the picture more and more: cosmic rays, ionization, static electricity, radiation are likely to be recognized in the future as physical stimuli having an ever-increasing effect on living things.

Then there are the biologic stimuli in the environment. What characterizes these agents, from bacteria up to man, is that all living things organize themselves into societies. What is a society of living things? A society is a *temporary* pattern of mutual tolerance that occurs after the dynamism of reciprocal exclusion has been exhausted.

This notion that all living agents participating in a disease complex live in a social organization is important in understanding disease, because in the social structure of living things there are dominants and dominated. If anything is done that may kill the dominant, then the dominated may come to the surface and a change may occur that will create entirely new conditions. As an example: no schistosomiasis has been found in Thailand, although it exists in nearby Vietnam and in China. One of the reasons could very well be that the intermediate host of the fluke, the snail, has an enemy in the regional waters where the studies have been made, and therefore that

snail has never had a chance to survive. It could also be that, without the existence of an enemy, the physical circumstances are such that the ecology of the snail is not satisfied. Modern therapy with antibiotics is, of course, based on this principle. Biotherapy aims at replacing harmful dominants by harmless ones within the internal environment of the host.

Another interesting subject about which little is known is the ecology of viruses. How do these things live? Is the definition of society true also of viruses? Do they organize themselves into this social pyramid, with dominants and dominated? No one knows. It is quite possible that these strange particles have another mode of life entirely, which would mean that, unlike the protozoan-caused diseases, virus diseases would not be subject to biological control.

Brief mention has been made of the physical and biologic stimuli that may cause disease. The social and economic factors in the environment may also cause disease, but they will be discussed later when culture is studied as the set of factors either linking the stimuli and the host or separating them.

The host's response to the harmful stimuli evoked above is governed by the genotype; that is, the sum total of the genes of the living thing. One must not forget that the genes govern the enzymes, which are extremely important in giving off the response of the living thing to the outside stimuli. Why is it that one cannot give leprosy to a dog or cholera to a guinea pig? These animals have not acquired immunity by previous exposure. One has to accept the hypothesis that natural immunity is the result of some enzymatic combination in the tissues of the animal that either contains a poison lethal to the agent under consideration, or does not contain a nutrient essential to the development of the agent. Obviously, therefore, the genes govern in a direct way the disease pattern and susceptibility of populations of living things to the stimuli just discussed.

That is not all the genetic story from the geographic point of view. It is known that once an individual is thrown into life with his genetic establishment, he begins to be the target of the stimuli from the environment which model him into shape. The geneticists call this shape of the genotype the "phenotype." One can, with the pressure of the fingers, transform a pellet of clay into a dog, a ring or a dancer, but it will always be the same pellet of clay; so the genotype will be the same but will look different through the pressure of the environment. From the moment a living thing is thrown into an environment, he begins to acquire the scars which, in comparison with the pellet of clay, are the pressure of the artist's fingers. The personality of a living thing at a given time is the sum total of the scars it has acquired since it was first created.

It has been pointed out that if a dog is once beaten with a cane, the second time he is shown the cane he will run away. Such a reaction is true emotionally, certainly, but it is also true in many other ways. Suppose that the profession of dairy maid had been extended to all the population of England; exposure to cowpox would have resulted into universal protection against smallpox. Since there is a possibility that cross-immunities exist and that immunities may be acquired from contact with a related agent of disease, it is quite possible, indeed it is even certain, that the patterns of disease are greatly influenced by these biological scars the living things have received since the inception of their life in a given environment. Certain of these scars are beneficial — such as the antibodies; others are detrimental — such as allergies; but that they play a role about which little is known in governing the disease pattern is almost certain.

Between the stimuli from the environment and the genetically governed responses from the tissues stands culture. Culture can be defined as the sum total of the concepts and techniques used by living things to survive in a given environment. That does not mean that all cultural traits are survival-worthy. As a simple example, in a country where the soil is polluted by hookworm larvae, the trait of going barefooted certainly brings together the stimulus and the host, whereas the wearing of shoes will separate them. Diets, which are culturally controlled by two things, what the parents of the individual used to eat and the availability of food, can bring together a lethal stimulus and response.

The country of Vietnam is made up of a flat, over-populated delta, surrounded by a number of hills where there is much less concentration of population. It so happens that there is no fierce malaria vector in the delta, while Anopheles minimus abounds in the hills. The people of the delta are rice growers. Their kitchens and pig styes are both separate from their houses. The three little buildings are on a one-floor level because the material used in building them is rice straw and mud, which does not lend itself to skyscraper architecture. This material governs the housing pattern and the way of life. In the hills there is no rice, but there is timber, and the houses are built on piles. The animals, naturally, are put under the floor of the house between the piles; the people live on the floor above. They do their cooking right there, which fills the living room with smoke.

Now, many times the government of Indo-China, confronted with the problem of starvation levels in the delta, has tried to push the population into the less inhabited areas of the hills. When this was done, the people of the delta carried their culture into the hills. They created their villages at ground level, and they kept their houses apart from the kitchen and from the stables. Many of them quickly died of malaria transmitted by Anopheles minimus. Now, how did it happen that the hill people could survive in that environment? The answer is that they had a culture that made them live above the flight level of Anopheles minimus. Furthermore, their habit of cooking the meals in the living room resulted in a smoke-filled room where the mosquito could not thrive. For such reasons, their varying cultures allowed some people to survive in the hills and prevented others from surviving there. It is evident that the social, economic and cultural factors are extremely important. Details like the availability of building material are important in governing disease patterns and should be studied with them.

The changing map of disease provides additional information. The map of disease changes because the physical environment changes, either naturally or artificially, such as when man creates a Tennessee Valley Authority or builds up Manhattan. The story of the Bay of Milo in the Near East is an interesting example. Herodotus indicates that in his time, about 2,000 years ago, the Greek fleet was able to find shelter in the Bay of Milo. It could not do so today because Milo is a hundred miles inland. The alluvia of the river has filled in the bay, and the city of Milo which Herodotus described as a rich, mercantile community is now just a small village with a tuberculosis and malaria ridden population. Ecologists keep track of changes in the disease pattern caused by changes in the physical environment, and forecast them when man plans to change the environment.

An important aspect of these changes is that the situation changes also at the host end of the equation. In other words, the geography of genes changes. There are two major reasons why this is true. First, when the pressures of population, adverse circumstances, need for food and so forth drive a population away from a place, a vacuum is created into which other populations, perhaps better adapted to those circumstances, might move. Secondly, the populations that have been driven from their environment — and this applies to mosquitos as well as to man — go to another environment where the genes will be pooled and mixed, thus creating a new genotype which is likely to oppose a new set of responses to the attacks of the stimuli.

There is proof that the genotype of certain populations does change, and hence will change the disease pattern. For example, the sickle-cell trait is a genetic factor that occurs in certain populations and gives them a survival-worthy protection against the parasite of malaria found in the same region. With regard to that question of why there is no schistosomiasis in Thailand, it could well be that there is some genetic factor involved in the population of that region that makes it impossible for the larvae of the blood fluke to develop after it has penetrated the skin. Such changes in the genotype are caused by pressures from the environment. Moreover, it is known that under the influence of certain factors, such as radiation, mutations occur. No one knows how many factors in the environment are mutogenic. It is quite possible that heat, poisons secreted by viruses or bacteria and quite an array of other environmental forces may also determine mutation in living things, which may make them entirely unsuitable for the development of disease or even more suitable than they had been.

The mystery of cholera epidemics is a strange one. Nobody knows exactly why cholera epidemics are sometimes severe and sometimes not. Of course, when no one knows, it is fascinating to draw hypotheses. It is quite possible that mutogenic factors influence the cholera bacillus in its natural environment, making it more or less virulent. It is also possible that the same mutogenic factors may influence a possible intermediate host in the cholera complex. Of course, cholera can be transmitted without an intermediate host, but some Indian researchers have found recently that fish might be a reservoir of cholera and might house the cholera bacillus in between epidemics. It is not inconceivable that the forces acting upon this temporary intermediate host might have an important role in the cholera epidemics. When one tries to understand disease patterns, all of these possibilities must be kept in mind.

Summary

In order to have some knowledge of the disease pattern, one must know the three W's: Who has What, and Where. This can be a tough problem, because often there is no diagnosis, or if there is one it may be wrong. A great step forward would be taken if more precise statistics and more precise, standardized collecting of materials on disease occurrence were made available.

Once the diagnoses are known, comes the fourth W, the most intriguing question of all: Why? This question might be answered by a careful study of all the factors listed in this discussion. There is a great future in the study

of the geography of genes, that is, in the study of the host. Until now, people have dedicated themselves to the study of the stimuli; they have studied only the environmental circumstances that might determine the reason for the maladjustment that is called disease. Researchers now find that they must study the host to find out what makes a certain animal susceptible to a certain disease. That does not mean only transmissible disease. It means things like a coronary thrombosis, and schizophrenia, and all the array of nontransmissible and behavioral disorders. What is it in the system of this animal that governs a maladjusted response to stimuli with which other living things can cope? This is the beginning of an era of investigation of host types, during which it is hoped the answers to such questions will be determined.

Top Facts About Mental Illness

At least 17,000,000 Americans (1 in every 10) are suffering from a mental or emotional disorder.

This year, about 300,000 people will become mental patients for the *first* time.

Half the cases a physician sees are tied up with a mental or emotional disorder. The same is true for one out of three patients who go to general hospitals.

At the present rate, one out of every ten children will need to go to a mental hospital sometime during his life because of a severe mental illness.

The cost for care and treatment of mentally ill is at least 3 *billion* dollars a year.

For every $1.00 spent in caring for the mentally ill, about 1c is spent on research into the causes, treatment and prevention of mental illness.

State mental hospitals spend an average of $3.64 a day per patient. (This covers food, shelter, supplies, doctors and other staff — or *all* care and treatment.)

General hospitals, on the other hand, spend $26.02 a day per patient.

Right now, there are about 750,000 patients in our mental hospitals. This is as many as in *all* other hospitals combined.

When adequate care and treatment are provided, 7 out of 10 mental patients leave mental hospitals improved or recovered.

The average state hospital has:
Less than half the doctors it needs
One-third the social workers it needs
Two-thirds the psychologists it needs
One-fifth the nurses it needs

Three-fourths of our state mental hospitals are greatly overcrowded — and many have waiting lists. The Federal Government estimates at least 250,000 more mental hospital beds are needed.

Community mental health clinics now number a little over 1,300; half of them part-time. At least 3,300 full-time clinics are needed to have one clinic per 50,000 population.

A NEW ANALGESIC

—Clinical Report

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An analgesic that effectively relieves pain without the attendant effects associated with compounds containing codeine. An evaluation of the analgesic in common types of pain seen in industrial practice.

An analgesic that will relieve pain effectively and yet cause a low incidence of side effects has been sought for many years. Such side effects as dizziness, light-headedness, drowsiness, dysphoria and vomiting may not only prevent men from working effectively but, more importantly, may increase the hazards of serious accidents, especially in those individuals responsible for operating potentially dangerous machinery, or in others who must climb, work at heights or in excessive temperatures. We have frequently noted such side effects after the use of codeine-containing compounds. In our experience, only aspirin or aspirin-phenacetin-caffeine type agents can safely be used for an individual who falls into the categories mentioned above. It is our practice to send men home from work if it is necessary to administer an analgesic more potent than aspirin.

Recently a new, nonaddicting analgesic containing ethoheptazine and acetylsalicylic acid® was made available to us for evaluation in an industrial clinic. Previous reports have appeared concerning the pharmacological properties of ethoheptazine,[1,2,3] the clinical effectiveness and safety of both ethoheptazine and ethoheptazine combined with aspirin[4,5,6,7,8] and the lack of addiction of ethoheptazine.[9,10,11]

Ethoheptazine combined with acetylsalicylic acid was administered to approximately 100 employees suffering from various types of pain commonly seen in an industrial clinic. The majority of individuals had musculoskeletal pain resulting from trauma such as contusions, fractures of small bones, sprains, low back pain, tennis elbow, etc. The usual dose was two tablets every four hours as needed. The patients were instructed to report back to the dispensary. Adequacy of pain relief and the presence or absence of side effects were ascertained by asking nonleading questions in a standard manner.

Our results are in agreement with those reported by Cass.[5] In our opinion, the degree of relief in these types of musculoskeletal pain following administration of two tablets of ethoheptazine combined with acetylsalicylic acid is equivalent to that following use of acetylsalicylic acid (or "APC" mixtures) plus 30 mg of codeine. Zactirin was prescribed for a few patients with fractures and severe contusions to whom ordinarily we would have given morphine or meperidine. As expected, the combination of ethoheptazine and acetylsalicylic acid was not effective in relieving these severe types of musculoskeletal pain.

None of the patients reported the occurrence of side effects, including those who took more than eight tablets per day. Blurring of vision, light headedness, dizziness, vertigo, gastrointestinal upset, mood elevation or depression, which are not infrequently noted following the administration of codeine or other narcotic agents, were not experienced by this group. Al-

® Supplied as Tablets Zactirin by Wyeth Laboratories. Each tablet contains 75 mg of ethoheptazine citrate and 325 mg of acetylsalicylic acid.

though the occurrence of nausea, heartburn or epigastric distress was anticipated because of the acetylsalicylic acid content of the tablets, these were infrequent complaints, which occurred no more often than after the administration of acetylsalicylic acid alone.

Summary

A new, nonaddicting analgesic agent, ethoheptazine in combination with acetylsalicylic acid was used as the routine analgesic in approximately 100 patients with the common types of pain seen in an industrial practice. This new analgesic combination is, in our experience, equivalent in effectiveness to that of codeine, 30 mg, plus aspirin or aspirin compound, 600 mg, but the usually expected side effects of codeine were noticeably absent. Our experience is not sufficient to recommend use in patients with other than musculoskeletal pain. However, in these types of pain, the effectiveness and lack of side effect liability permit us to keep many employees at work who formerly were sent home.

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Medical Uses of Tobacco In Time Past

It has been remarked that the first introduction of tobacco into the several countries of the world has always been in the guise of a medicine. One account (Med. Record 25:684, 1884) of the origin of the use of tobacco as a medicine has it that "Sir John Nicot, Ambassador of the King of England to Portugal from 1559 to 1561, received a present of this then strange plant from Florida. He planted it in his garden, where it grew abundantly, and finally heard that a man had been cured of a *noli me tangere* (rodent ulcer) on his cheek, near unto his nose, and which already had begun to take root at the gristles of his nose, by applying tobacco-juice and the bruised herb. From that time forward this plant began to be famous throughout all Portugal for ulcers of the leg, ringworm, and scrofula. It was finally sent to France to help Lady Montigny, who suffered with an ulcer bred in her breast, and Countess of Ruffe to heal her face. The Lord of Jarnac caused the nicotine to be distilled and drank, mingled with water of Euphrasia, otherwise called eyebright, by one that was short-breathed or asthmatic, and it cured him. When the juice was absorbed it sometimes made the patient exceedingly uncomfortable and faint." There is a light note of English patriotic zeal in this otherwise delightfully graphic account, for Jean (John) Nicot was actually Ambassador of the King of France. Incidentally, it is in his honor that the principle alkaloid of tobacco, nicotine, was named.

—H. Silvette, Ph.D.,
P. S. Larson, Ph.D. and H. B. Haag, M.D.
in Virginia Medical Monthly
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INDUSTRIAL PRACTICE, Polynesian Style

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If you are tired of snow and ice, have an adventurous streak and are a frustrated beachcomber at heart, try a plantation practice. It's a good life.

For many years, the sugar and pineapple industries in Hawaii have provided their employees with excellent medical care, paid for largely by the employers. The standards of care and the resulting Public Health statistics of these rural Hawaiian localities are among the world's best. Infant mortality, contagious disease patterns and general preventive measures are closely watched by interested private and governmental agencies. Currently, attention of the researchers in the field of degenerative cardiac diseases has been focused on the varied racial groups living and working on the vast Hawaiian plantations, with the hope that close dietary studies might help explain atheroma.

Typical in the medical affairs of a plantation, the 14,000 acre Kohala Sugar Company, on the "big island" of Hawaii, affords an excellent cross section of plantation medical practice. The plantation borders the sea, and extends "mauka," or inland, to the Kohala Mountains, a chain of old

A view of the Kohala Sugar Company Hospital, a fifty-six bed Industrial Hospital in the Hawaiian Islands.

volcanic peaks and cones. It includes several small communities with names as fascinating as the locale itself, Kapaau, Honomakau and Honoipu; names which surprisingly do not cause "house call" difficulties, once known. These small settlements are connected by an excellent paved road winding through deep gulches of banana groves, guava thickets, stately coconut palms and miles of valuable sugar cane. About 3,500 people live on the plantation. Some are not plantation families, but all use the plantation medical facilities as either prepaid or private patients. For other than plantation patients, a good doctor-sponsored medical plan is in effect in the Islands, and private insurance coverage is increasing. Patients come to the plantation medical offices from more distant parts of the island as consultation cases, or for other reasons. A rather free exchange of patients occurs between plantations in emergency care, and consultations are easily arranged with suitable specialists.

A union medical committee exists which confers with the company and its physicians in case of conflicting interests, but it is astonishing how rarely problems arise.

Typical of most Hawaiian plantation practices, the medical work at Kohala is done by two physicians, one who is in his tenth year as Senior Physician, and a newer man who previously practiced in the Northwest. Both men have had additional training beyond internship; one is board certified in pediatrics. The doctors are employed by the Kohala Sugar Company, and have private practices in addition. As on most plantations, various perquisites are offered by the management, so that doctors' incomes are excellent, with the additional advantage of participation in generous retirement and disability plans.

Pleasant office or dispensary facilities are provided and maintained by the plantations. Open porches or lanais add to an atmosphere of easy-going Hawaiian friendliness in the daily dispensary routine that includes 50 to 100 office calls, many of them brief, baby and maternity clinics and monthly consultation visits by an ophthalmologist.

Hospitalization is available in a well equipped, clean hospital of 56 beds, county operated and well staffed by competent nurses and technicians. The hospital acts as a clearing point for all calls outside of office hours, an arrangement that insures good service as well as adequate time for both doctors to enjoy uninterrupted periods of study and recreation. The hospital has good x-ray equipment, laboratory and physiotherapy facilities, and enjoys the best of physician staff relationships, including Audio-Digest tape sessions at "coffee-time" two days a week for all hands.

The population of rural Hawaii is varied. Seven races are present in pure and mixed forms, and all bring to the physicians' daily work a novelty and cultural richness that is unique. Japanese, Chinese, Filipino, Hawaiian, Portuguese, Puerto Rican and Haole (Caucasian) work together in harmony and mutual respect that often astonishes mainland visitors. Plantation communities generally demonstrate that peaceful and intelligent cooperation in community affairs can effectively cut across racial and religious differences, a fact that even the well-traveled American often finds amazing.

Many of the Oriental families in Kohala are of the Buddhist faith. Their homes and temples

Exterior view of a typical Sugar Plantation Dispensary in the Hawaiian Islands.

are beautifully decorated in the manner of the Eastern arts and traditions. It is a memorable occasion to make a house call in a Japanese home. One is made to feel that hospitality and impeccable manners must have begun in the Orient.

The language differences among seven races and nationalities are of great interest. "Pidgin English" bridges the major gaps, and can be learned in a few months. Such essentials as holo-holo (vacation, or to walk around), hana-hana (work), kau-kau (food), and huli (turn over) are learned quickly, and it is not unusual to greet patients on morning rounds in five or six different tongues. A functional inquiry in Hawaiian is a medical triumph for doctor and patient alike. Much Hawaiian medicine is still practiced by "Kahunas" or skilled laymen who use old remedies, massage and bone-setting techniques handed down from ancient times.

Home calls are not frequent, but are always interesting. A Jeep or station wagon is useful during the occasional rainy spell that makes some plantation roads a bit muddy. But weather is no problem by mainland standards.

All deliveries are in the hospital, except for the occasional two-pain multipara. Birth is looked upon as a natural process, so little or no analgesia is requested or given. Mothers are unbelievably relaxed in labor; infant morbidity is low, and most local mothers consider it a matter of shame to complain at all of labor pain.

How about recreation? All that the tourist sees, the folders claim and the pictures show, is here for the physician and his family every day of the year. In addition, there is a world of remote peace and beauty in rural Hawaii that the tourist never sees. Hidden beaches, pools alive with exotic fish, secluded mountain streams banked with ginger, frangipani and wild orchids, are all part of Hawaiian living. To enable one to enjoy all this, vacation schedules are generous for most plantation doctors; usually three weeks annually, with three months off every three years for mainland or foreign travel. One is encouraged by travel allowances to attend medical meetings often held on neighboring islands. Work schedules are realistic so one can enjoy considerable freedom for study and play. There is never anxiety over whether one is adequately "covered." Research is encouraged, and at present at least one long-range plantation financed medical research program is in effect.

Accomplishments

Recently a 30 year review of the health changes that have occurred on the plantations was published in *Plantation Health*. Some of these findings seem appropriate for inclusion with this paper since the present health system has been in operation for about 30 years.

"Certain morbidity factors that were important health problems in 1928 have disappeared in today's health picture. For instance (all the figures will be per 100,000 population of the sugar plantations), the typhoid death rate in 1928 was six; beri-beri, 35; diphtheria, six; syphillis, five; appendicitis, four; hernia, three; puerperal deaths, nine. This past year all these items had a zero rate. The total death rate in 1928 was 894; last year it was 680. In 1928, 340 infants died on the plantations and last year only 16 infants died. Ninety infant deaths were from diarrhea in 1928, whereas only one died from this same cause last year. The rate of deaths from pneumonia dropped from 170 to 54 last year. For pulmonary tuberculosis deaths, the

rate was 28 to last year's 12. The nephritis rate dropped from 28 to 16, and the suicide rate from 17 to 14. The rate of serious accidents has decreased from 1082 (1935) to 128 (1957).

However, in certain categories there has been a striking rise. These are the categories in which we have been particularly interested and about which we feel every plantation doctor must have real concern. Cerebral hemorrhage has risen from 39 to 80; vascular heart deaths from 87 to 182; diabetes from five to eight; and the cancer rate has risen from 33 to 124.

The Good Life

Many physicians, young and old, would find happiness in the plantation world of Hawaiian lore, ancient temples and village sites, a life in a situation where one can read widely, see a whole new world of nature, have time for creative work and feel great satisfaction in helping to bridge the cultural gap between the East and West, beside having the opportunity of practicing good medicine where it is needed and appreciated.

For those who might fear isolation, transportation to Honolulu or Hilo (Hawaii's second largest city) is quick and frequent, and TV is universal in the Islands. One can feel everywhere in Hawaii the boom of new East-West developments.

Openings for plantation practice are not common, but can be had occasionally. Licensure is not easy, but can be accomplished. Examination and residence requirements must be met, but these are reasonable and just.

Prospective Study

A comprehensive one-year study of the prompt and effective rehabilitation of industrially injured workers is being initiated by New York University under a contract with the Workmen's Compensation Board.

The interdisciplinary approach by New York University to the problems confronting all concerned with the quick restoral to productive employment of the industrially injured should provide sound guidance and give both the administration and the legislature objective insight into the basic nature of the problems.

The Study will undertake extensive exploration of four principal areas. First, in the medical area, there will be a canvass to identify the types of disabilities warranting rehabilitation; the means by which early referral of those cases may be assured; the status of, and fees to be charged by, physicians involved in rehabilitative care; and the availability of rehabilitation facilities in the State.

Second, in the legal area, the University will investigate the impact, if any, that the development of an effective workmen's compensation rehabilitation program may have on the principle of free choice of physician, the Board's part in claimant referrals, the degree of supervision to be exercised by the Board, the amount of compensation to be allowed while a claimant undergoes rehabilitative treatment, and the role the Board is to assume in connection with the placement of rehabilitated workers.

In the economic field the study will be concerned with rehabilitation and its effect on workmen's compensation costs, and the economic contribution of the rehabilitated worker. The relationship between the Board and cooperating agencies of State government presently concerned with this problem will also be reviewed.

In terms of community responsibility, the Study will provide an analysis of the attitudes of labor unions and management in the placement of the rehabilitated compensation claimant.

At New York University, which itself has recently established a separate center devoted to the study and teaching of rehabilitative procedures and their social, economic and legal concomitant problems, there is a distinct opportunity for sympathetic analysis of this complex point of development in the evolution of our social insurance laws.

With the various schools of the University participating in, and contributing to, this Study, the final report will make a valuable contribution to the continuing effort to reduce the costs of workmen's compensation while at the same time enhancing the net benefits to industrially injured workers.

Industrial Compensation Aspects of HEART DISEASE

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• GORDON G. BERGY, M.D., Director, Hall Health Center, University of Washington

There is a general feeling of futility concerning the cardiac compensation problem, but the experiences of the authors lead them to be more hopeful than many others. The methods outlined here would be applicable in many states.

During the past five years the Washington State Heart Association has sponsored a cardiac rehabilitation program, an important aim of which is the employment of individuals with heart disease. Early in the program it became apparent that attempts to return cardiacs to work met with resistance which in some cases was based on the employer's fear of increased costs under the Industrial Insurance Act should an employee suffer a heart attack or death from heart disease while at work. This conflict between our efforts at rehabilitation and the effects of the Industrial Insurance Act provided the reason for our interest in the medical-legal aspects of heart disease. There is considerable evidence that this problem is not unique to this state. Though the following is based largely on our experience in Washington State, the principles are presented in terms applicable elsewhere.

The conflict between rehabilitation efforts and the effects of the Industrial Insurance Act is exemplified by the following excerpts from a letter of a Washington State employer to the Department of Labor and Industries in 1952 protesting the granting of a cardiac compensation claim to one of his employees:

". . . . . this particular award is no more vicious or false in its premise than . . . others . . . . Mr. ——— ——— suffered a heart attack which is not unexpected in a man of his age.

"I have made a firm and fast rule in all of our operations in this State, wherein we employ better than 600 men, that under no circumstances will men past the age of 55 be hired, irrespective of their qualifications. If industry must pay a price for every sickness and ailment that occurs while an employee is working on the job, then of course we must limit our employment to the ages when diseases and infirmities that come with the later years will not result in claims being granted by your Department. This is a pity for there are many people in the older age group who can perform adequately in many of our job classifications. My next step will be to discharge employees in certain age classifications because of the exposure involved by reason of your rulings. I am also recommending similar action to all employer groups to which I belong. . . . . "

Although the physician plays an important role in the administration of Industrial Insurance Acts, teaching of cardiovascular disease in medical schools includes little about the relationship of stress to the development of aggravation of heart disease. This is partly because it involves only a small portion of the field of clinical cardiology and partly because little is known. The omission, however, leaves the practicing physician poorly prepared to decide the question of causal relationship of a given effort at work to a subsequent heart attack. From the standpoint of clinical practice, it is not important whether the lifting of a 100 pound sack one half hour before the onset of symptoms was a significant factor in the development of a myocardial infarction, but it may be of critical importance in determining whether the workman or his

widow has an industrial claim. At some time in his practice such a question may be addressed to the physician by a potential claimant, by the insurance carrier or by a cross-examining attorney. With this lack of attention to the medical-legal aspects of heart disease it is not strange that medical opinions as to the relationship of stress to heart disease are widely divergent. This disagreement is compounded by other factors, viz: (1) The physician is often uncertain whether his opinion should be a strictly medical one or whether he should attempt to interpret the law as he thinks it applies to his case. On this point the Washington Supreme Court in several decisions has made it clear that it does not consider itself expert in medical matters. It regards the determination of causal relationship between injury and a subsequent disability or death as a medical matter to be established by medical testimony. It seems equally clear that physicians are not presumed to be expert in judicial matters and should confine themselves to the medical portion of such problems and leave the interpretation of the law to the legal profession. (2) Like others involved in compensation cases the physician is often influenced by his sympathy for the claimant or his widow. While such sympathy for the unfortunate is commendable, it is contrary to the aim of Industrial Insurance Acts and should play no part in decisions as to causal relation.

There are able internists in this country who recognize no relationship between effort and the development of myocardial infarction. Equally competent physicians have testified that since a heart attack occurred on the job the effort involved in work must have had some influence on the final event and therefore the worker should be given the benefit of the doubt. With physicians in such disagreement it is no wonder there is confusion among nonmedical administrators of industrial insurance laws and appellate bodies as to the merits of heart claims.

The Industrial Insurance Act in the State of Washington was enacted in 1911. Prior to this time an injured workman in order to receive compensation for an industrial accident had to sue his employer and prove negligence. The process was slow, expensive and favored the employer. The Industrial Insurance Act was written primarily to cover traumatic accidents on the job. Its aims were the prompt and adequate compensation for injury, good medical care and, indirectly, the prevention of accident by penalizing employers for unsafe employment practices. In Washington, Industrial Insurance is administered solely by the Department of Labor and Industries under a Director appointed by the Governor. The Washington Workmen's Compensation Act provides for the existence of two separate funds, the accident fund and the medical aid fund. Time loss payments, disability awards and pension reserves are paid from the accident fund. It is created by contributions from employers alone; the workman makes no contributions to it. The medical aid fund provides the money for paying medical and hospital care; it is contributed to equally by the workman and the employer.

The authors of Workmen's Compensation Acts almost surely did not envision the heart attack as an industrial injury. The earliest heart claim to reach the Supreme Court was in 1926 and was accepted as compensable. At present the heart claim is accepted generally as a legitimate one under the laws of most states. It is commonly stated that there has been an increase in recent years in the number of heart cases held to be compensable as arising out of and in the course of employment. The same impression holds in this state but is not borne out by the data for accepted "heart cases," as is shown in the accompanying table of the experience of the Washington Department of Labor and Industries for the years 1950 through 1955 (Table I). There has actually been a decrease in total numbers since 1950.

TABLE I.
HEART CASES ACCEPTED FOR COMPENSATION IN THE YEARS 1950-1956
State of Washington Department of Labor and Industries

Year	Time Loss[1] and PPD	Fatalities[2]	TPD[3]	Totals
1950	54	46	24	124
1951	56	31	22	109
1952	43	29	21	93
1953	44	21	15	80
1954	42	34	11	87
1955	38	29	15	82
1956	30	35	8	73

1. Claims resulting in payment for time loss and award for permanent partial disability (PPD).
2. Total cases in which a death benefit was paid.
3. Cases in which a pension was awarded because of total permanent disability.

These figures, showing a progressive *decline* in the number of accepted heart claims in Washington since 1950, are surprising when compared with similar data from New York State for the same period showing a progressive *increase*, and with statements commonly made regarding similar increases elsewhere in the United States. One cannot help wondering whether our experience is as unique as it would seem. The above figures and those of the two following tables are a part of much more extensive data on "heart cases" being recorded in a research project sponsored by the Washington State Heart Association in cooperation with the Department of Labor and

Industries, to be reported later. We feel this factual information will be of considerable value to those interested in this problem.

In order to have an idea of the magnitude of the cost of the cardiac compensation problem in this state the following figures are presented from Department of Labor and Industries statistics for heart claims with comparative data for another important compensation problem, the "back case" (Table II) and for the total cost of all workmen's compensation payments. These data demonstrate that, although the total cost of heart claims is less than orthopedic disorders, cardiac compensation claims pose an important economic and medical problem in this state. The individual cardiac PPD payment averages $2335.00, the similar "back" payment, $639.00.

TABLE II.
INDUSTRIAL COMPENSATION CLAIMS—STATE OF WASHINGTON
Averages per year based on the years 1952-1955 inclusive

	"Heart"[1] PPD[2]	"Back"[3] PPD	All Heart Cases	All Back Cases	All Claims
Number per year	42	1,120	93	4,275	94,082
Total cost per year	$98,058	$1,379,522	$904,335	$2,732,285[4]	$18,309,148
Cost per case	$2,335	$1,232	$9,724	$639	$195

1. "Heart" includes coronary thrombosis, coronary insufficiency, heart failure, cardiac trauma.
2. PPD — abbreviation for permanent partial disability — a lump sum award made for residual disability after treatment for "injury."
3. "Back" includes back sprains, fractured vertebrae, bruises.
4. Includes medical expenses, time loss payments and PPD awards, but does not include total permanent disability pensions or death awards.
5. All claims for industrial injury, of any type, received by the State Department of Labor and Industries.

"Heart" claims are relatively few in number but very high in individual cost, even when compared with notoriously costly "Back" claims. Their total cost represents an important part of the annual industrial insurance disbursement.

From a medical standpoint, in the majority of cases we are dealing with coronary disease, a chronic progressive illness which in its evoluton is often punctuated by sudden worsening in the form of myocardial infarction. The physician faces the difficult task of deciding when some effort or stress at work played a significant role in the precipitation of such an occurrence on the background of pre-existing arterial disease. The disparity in testimony of medical witnesses and a gradually developing tendency toward more liberal awards have led in some states to the granting of claims to almost any individual having a heart attack at work; until it has become, in effect, sickness insurance rather than industrial insurance. Industry, feeling no responsibility for the medical care of the end stages of degenerative disease, has often closed its doors to applicants with known heart disease, and this position is not unreasonable in view of the above. However, with the older segment of our population increasing in number, the prospect of retiring practically all individuals with heart disease regardless of their capacity to work is not only wrong, but an impossibility from an economic and social standpoint. How can this unsatisfactory situation be remedied?

There are a number of possibilities, including (1) *Research to clarify the relationship between effort and cardiac accidents*: Two such projects are underway sponsored and subsidized by the American Heart Association. Other studies relating to the life history of individuals with heart disease including the effects of work will shed light on this relationship. Such information will be forthcoming from some industries with good medical supervision and follow-up. Data from the 50-odd Cardiac Work Evaluation Clinics around the country sponsored by affiliates of the American Heart Association, when collected and analyzed, should also contribute important information on the effect of various kinds of effort on the heart. However, even with these excellent studies and others, it is difficult to predict a time in the near future when we will be able, with complete accuracy, to determine when a given stress was a significant factor in the precipitation of a particular cardiac accident.

(2) *Amendments to existing industrial insurance acts*: These are aimed chiefly at protecting the employer from unjustified penalty for the development of symptoms of the degenerative disease among his employees while at work. Two particular suggestions have been made, the first being the signing of a waiver by the workman with known heart disease, freeing the employer from any responsibility for aggravation of his disease. There is real question as to whether the waiver would be legally enforceable in most states. There are also strong objections from the unions, who feel that the waiver would be abused by some employers to the detriment of the worker. The other suggestion involves the passage of a "second injury" law or the modification of one where it already exists in order that it would cover disability or death from job-related heart disease. Such a law would lessen the penalty to employers of known cardiacs for subsequent heart attacks or death among their employees. This is accomplished by setting up a special fund to which all of industry contributes and from which the disability award or pension for a subsequent heart attack is paid, provided of course such attack is judged to be causally related to work. The use of the second injury law in heart cases has been much discussed by those interested in this problem and has been employed in some states.

Some students of the cardiac medicolegal problem hold that the medical basis for establishing causal relationship in heart cases is so uncertain and the original intent of the law so warped that no attempt should be made to decide which case is related to work: that *all cardiac claims should be excluded from workmen's compensation coverage.* If they are to be excluded, some have suggested that a separate insurance program be developed to cover all cardiovascular accidents in workers regardless of job-relation.

In some states the granting of cardiac claims has become so liberal that the opinions of physicians regarding relation to work have little influence in the decisions rendered. This is not true in the State of Washington, and should not be in the future unless the physicians involved forfeit their right and duty to give considered and objective opinions as to the relationship of effort at work to subsequent heart attack or death.

In this State, upon the recommendation of eminent legal consultants, we have not attempted to amend the Industrial Insurance Law but rather to improve its application.[1,2] Our efforts have been in three directions: (1) the formulation of medical criteria for the relationship of stress to heart diseases, (2) the setting up of a system whereby a panel of internists evaluate all cardiac claims and (3) the improvement of rehabilitative efforts toward the injured workman.

Working toward the first aim, a Trauma and Strain Committee of the Washington State Heart Association under the chairmanship of Doctor Samuel Aronson, after much discussion, was able in 1955 to formulate and agree upon medical criteria for the relationship of stress to heart disease. Similar criteria drawn up in 1952 by a group of internists in Salt Lake City and subsequently referred to as the "Utah Plan"[3] were of considerable inspiration and assistance to the Committee. Our criteria have been approved by the three Societies of Internal Medicine of the State and have been presented and freely discussed at meetings of most of the County Medical Societies of the State.

The deficiencies of our knowledge of the effects of stress upon the heart are well recognized by the Committee, as is the need for constant reexamination of the criteria as new information on this subject appears. It recognized that the criteria may need to be revised as further data on the effect of stress becomes available. However, free discussion of these criteria among Washington physicians to date has not demonstrated the need for significant modification. Since the ultimate truths in this matter may continue to elude us for many years, and since decisions on presently occurring cardiac compensation cases cannot be postponed, it is the opinion of the Committee that these criteria, based on the best information available, serve as a reasonable guide for physicians today. The Washington criteria referred to above have been published[4] and will not be restated in full. An understanding of the Committee's thinking requires complete reading of the report. However, it does seem appropriate to quote a few sentences covering the crucial part of the physician's determination of causal relationship, as follows, "Causal relationship of trauma to heart disease may exist under the following circumstances: (a) Sudden death from acute coronary disease (also coronary occlusion with myocardial infarction, acute coronary insufficiency and acute pulmonary edema) in which symptoms develop during the course of, or immediately following, exertion or strain that is both excessive and unusual for the particular individual concerned. Stated conversely, any such exertion or strain which is usual for the individual concerned should not be considered a cause of acute coronary disease." It is noted again that the above represents only a portion of one paragraph of the report of the Trauma and Strain Committee of the Washington State Heart Association.

Though there has been acceptance of these criteria in principle by the many groups of Washington physicians to whom they have been presented, it is recognized this does not necessarily indicate agreement among all such physicians on the relation of stress to heart disease. To check the amount of agreement or disagreement on this subject the summaries of ten cardiac compensation claims have recently been submitted to 70 Washington internists and 45 pathologists for their opinion as to causal relationship in each. Approximately two-thirds replied, and their opinions are summarized in Table III. The following is one of the case summaries so submitted:

Fifty-one year old, white male laborer worked one half day on a new job dumping concrete buggies and leveling concrete. Doing the two jobs was said to be excessive exertion — both are heavy and usually one man is assigned to each job. While working he became sick and dizzy and was sent to the hospital by ambulance and was found to have an acute myocardial infarction. Check one:

( ) The cardiovascular accident to this case probably *was* causally related to work.

( ) The cardiovascular accident in this case probably *was not* causally related to work.

( ) I am unable to make a decision in this particular case.

TABLE III.
CAUSAL RELATION OF WORK TO HEART ATTACK IN TEN DIFFERENT CASES AS EVALUATED BY INTERNISTS AND PATHOLOGISTS

	Case 1			Case 2			Case 3			Case 4			Case 5		
	Yes	No	Undecided	Yes	No	Undecided	Yes	No	Undecided	Yes	No	Undecided	Yes	No	Undecided
Int.	13	37	1	29	14	6	42	4	2	41	7	2	2	45	2
Path.	12	15	4	22	8	1	25	5	1	17	8	6	3	22	6

	Case 6			Case 7			Case 8			Case 9			Case 10		
	Yes	No	Undecided	Yes	No	Undecided	Yes	No	Undecided	Yes	No	Undecided	Yes	No	Undecided
Int.	31	13	4	4	38	7	7	32	2	0	48	0	20	24	3
Path.	14	7	9	2	17	12	9	20	2	0	27	4	18	11	3

Note that there was considerable agreement within groups and between the groups in all but two cases. (The same physicians evaluated all cases, but in some cases omitted opinions, so totals are not identical.)

Replies from 48 internists, and from 31 pathologists are recorded as case 3 in Table III. These cases were deliberately selected to include those in which there might be difference of opinion. As might have been expected, there was considerable disagreement among the physicians responding. However, it is of interest that there was agreement as to causal relation in the majority opinion of internists and pathologists in all except two cases. In case 1 there was no agreement among the pathologists. Case 10 was one in which opinion was evenly divided in both the internist and pathologist group, with a slight margin *for* causal relationship among the pathologists, *against* such relation among internists. It is of further interest that the majority opinion among the eight members of the Trauma and Strain Committee (seven to one in each case) was in agreement with the majority opinion of the internists as a whole, and with the pathologists in all except case 10.

George Strong in 1950[5] found a "notable lack of agreement on the compensability" of four cardiac compensation claims submitted to the Chief Medical Officers of four Provincial Workmen's Compensation Boards in Canada. As part of a study of heart disease claims in industry, Beard, *et al*,[6] in 1956 submitted 319 cardiac compensation claims to a group of California internists and cardiologists so that five physicians reviewed each case, giving an opinion as to causal relationship to work. There was agreement among all five reviewers as to causal relation in only 15%; however, at least three of the reviewers agreed in 70%. Ehrlich[7] in 1957 reported on replies from 398 internists and cardiologists throughout the United States to seven questions regarding the relationship of work to heart disease. There was good agreement that work does not cause heart disease, even though the work is moderately heavy. Opinions were evenly divided as to whether strenuous physical exertion or emotional disturbances might have a causal relationship to an ensuing myocardial infarction.

The disagreement found by Ehrlich and others as to whether a given strenuous exertion or serious emotional upset may play a significant role in an ensuing myocardial infarct probably reflects (1) our lack of knowledge in this area, (2) lack of medical education about the known effects of stress on the heart, (3) inadequate data on which to form an opinion in some cases and (4) the bias that is apt to occur in such questions due to the social, legal and economic implications involved. This last consideration is apt to cause the physician to forget that his responsibility is to determine, on the basis of medical fact alone, whether there is relationship between the effort involved and the cardiac consequences. It is not his place to interpret the law, to help the needy or to protect the employer. One may reasonably conclude that there is a great need for physician education in this field.

It was indicated earlier that our attack on the cardiac compensation problem in Washington had three parts. The medical criteria have been discussed. The second part of our program involves the use of a panel of interested and qualified internists to examine each cardiac claimant, or file of deceased claimant, with an opinion as to causal relation. This recommendation was accepted by the Director of the Department of Labor and Industries in June, 1955 and has been in effect since. No rigid rule of qualification for these panel members has been evolved. They have been chosen through the Washington Society of Internal Medicine only after genuine interest in the program was indicated, with willingness to examine such claimants and to testify if called upon. At least two such specialists examine each cardiac claimant or file of deceased (with autopsies whenever possible in the latter circumstance) and give their opinion as to causal relationship, this opinion presumed to be objective and impartial. This opinion has no legal status but serves to provide impartial and qualified medical opinion for the Department, or the Board of Industrial Insurance Appeals on which to base their judgment as to compensability. If

the case is appealed from the Department order by either claimant or defendant the panel members may be called to testify. It is our impression that the opinion of the panel is respected by all concerned. The passage of time and an investigation of Department files now under way will help to determine how often the decision of the Department, Board or Courts is in agreement with the medical opinion of the Panel. It should be added that we have had excellent cooperation from the Department, the Attorney General's Office and the Board of Industrial Insurance Appeals.

The third part of our program, and perhaps the most important, involves the improvement of rehabilitative efforts for the workman who has suffered a heart attack. Usually when a cardiac claim is filed, attention is immediately focused on the matter of causal relationship, and if the claim is accepted, on the amount of disability or pension payment. It is often only late in convalescence from such an injury, if at all, that serious thought is given, or action taken, toward returning the workman to a suitable job. By this time irreversible emotional changes and other ill effects of prolonged and often needless inactivity may frustrate the most energetic rehabilitative efforts.[8] This defect should not be attributed to inadequacy in the Department of Labor and Industries alone; it is equally the responsibility of the worker's physician and of the system. Washington is one of four states in which the workmen's compensation agency (the Department of Labor and Industries) operates a rehabilitation center for injured workers. The record of this center is clear evidence of its success.[9,10] However, it is to be remembered that this center, like most others of its kind, is devoted to the practices of physical medicine to help restore to a useful life the worker with amputation of a member, injury to a limb, back, etc. This is of vital importance for those it serves, but it is only one part of an adequate rehabilitation program. Such a program would require an adequately staffed, progressive medical department, as a part of the workmen's compensation agency, under which would function a rehabilitation division. It would be the responsibility of these two departments to see that the injured workman was receiving adequate medical care in diagnosis and treatment, that thought and plans were being directed early in the illness toward the kind of work to which he might return, and when necessary that proper rehabilitation facilities were being utilized.

As stated by the Subcommittee on Industrial Relations of the American College of Surgeons in 1950:[11] "Rehabilitation of the injured worker and his return to gainful employment should be the basic concept in an improved workmen's compensation system. . . ." The Committee on Workmen's Compensation, of the A. M. A. Council on Industrial Health, in their 1955 report[12] on "Medical Relations in Workmen's Compensation" list rehabilitation of the occupationally disabled as the *first* goal in workmen's compensation; indemnity for the disabled, and minimal cost to employer and society, *second* and *third* respectively. That rehabilitation is not only effective for the individual but profitable for the insurer, industry and the community has been demonstrated.[13,14] Separate rehabilitation units have been established in each of the Canadian Workmen's Compensation Boards. In the United States, the relationship between workmen's compensation and rehabilitation has been legislatively recognized in 17 states. These jurisdictions have specific provisions in the workmen's compensation law relating to rehabilitation of injured workers. Even in these, according to Pollock[15] "Most . . . . provisions are far too circumscribed for adequate maintenance during rehabilitation or to assure the services for the period required." Only four states have established a special rehabilitation unit in the workmen's compensation agency. Washington is not one of these.

One of the aims of our program to improve application of the Workmen's Compensation Act in Washington has been the prompt and fair settlement of heart claims before litigation is started. It is well recognized that litigation regarding claims leads unavoidably to months and years of delay while the case is being appealed, hearings held, etc. Rehabilitation efforts during this period are handicapped. Quoting Somers,[13] "To undertake rehabilitation while his compensation case is pending will often appear to the worker to jeopardize a maximum award since awards are related to the degree of disability." It is our hope that acceptance of the opinion of the "Panel" physicians as that of an expert and impartial board will lessen the number of cases proceeding to litigation, and allow quicker decisions as to compensability. When disability results from the heart disease, the panel members are urged to make recommendations about degree of impairment, the kind of work the claimant may safely resume, and whether special rehabilitation facilities are needed.

It would of course be desirable to know whether our program to improve the application of the workmen's compensation act in Washington has been effective. If it has it should lead to more uniform medical opinions regarding the effect of stress on the heart, fewer cardiac claims proceeding to litigation, prompt settlement of claims along with aggressive rehabilitation efforts and

better employment opportunities for cardiacs. It is too early to attempt such judgment, but the acceptance of our efforts by physicians, administrators of the law, employers and others leads us to be optimistic. It is recognized that there are many influences besides our own bearing on the way in which our workmen's compensation law is administered and that it is difficult to evaluate the relative importance of each. Recognizing these limitations, it is nevertheless of some interest to present Table IV which is a record of the number of cases appealed from decision of the Department of Labor and Industries to the Board of Industrial Insurance Appeals, and from the decision of the Board to the Superior Court in the State of Washington from the year 1950 through 1957. As previously stated, there is a downward trend in total numbers of heart claims in this state, contrary to estimates elsewhere in the country. There has been a slight decline in the numbers of appeals to the Board and to the Superior Court from the highs of 1954 and 1955, but this trend will need to be followed further to determine whether or not it is significant.

TABLE IV.
ACCEPTED CARDIAC COMPENSATION CASES
State of Washington 1950-1957, inclusive

Year	Total Cases	Decided Without Litigation	Decided after Appeal to "Board"	Decided after Appeal from Board to Superior Court	Percent Litigated
1950	124	108	16	5	12.9
1951	109	76	33	16	30 3
1952	93	61	32	16	34.0
1953	80	51	29	19	36.0
1954	87	46	34	21	39.0
1955	82	46	36	27	44.0
1956	73	45	28	19	38.0
1957	*		24	12	

"Board" is the Board of Industrial Insurance Appeals.
*Figures for this year not yet available.
The total number of cases has declined steadily. The number of appeals has recently declined. The percentage decided after appeal has remained relatively constant (with the exception of 1950 which did not follow the usual pattern).

Summary

Workmen's compensation laws were not designed to deal with heart disease as a compensable injury and this inclusion has created special problems. These include: (1) the difficult medical problem as to when work has a significant unfavorable effect on the course of a degenerative disease, and (2) employer resistance to employment of those with heart disease because of liberal claim awards in heart cases.

A program to improve the application of a Workmen's Compensation Act has been discussed, including the development of medical criteria for relationship of effort to heart disease, the use of expert panels to make a medical decision in each cardiac claim, and the development of better rehabilitative efforts for the injured workman.

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Paving the Way

What a working man can do at the age of 70 depends largely on what he did at seven, says Dr. Karre Rodahl, director of clinical research in a Philadelphia hospital. Dr. Rodahl recommends hiking, running, tennis, jumping, and just plain walking to school as suitable exercise for children. For adults: golf, skiing and swimming. An important reason for premature aging: "In this country, people just don't use their feet."

—From *Supervisory Management*, July, 1958.

CLIMBING UP STAIRS

This survey indicates that stair climbing may not be as taxing as once was believed.

• BERT HANMAN
Consultant, John Hancock
Mutual Life Insurance Company, Boston, and
Member, World Health Organization Expert Advisory
Panel on Social and Occupational Health

In actual climbing time (that is, not counting periods of rest between floors) an athlete could easily race up the 1,860 steps to the top of the 102 stories of the Empire State Building in three minutes. This could be accomplished by many nonathletes, even by some persons in their middle years who are beginning to sag with age. Average climbers could reach the top in a fraction more than 15 minutes of actual climbing time, while slow climbers could make it in about half an hour.

Fantastic as this claim may appear, the truth probably is that not this claim, but rather the common concepts of climbing are unrealistic. Many persons believe, and often succeed in convincing their physicians, that they are required to climb stairs for an hour or more a day. In truth, it is unlikely that they are climbing for even five minutes; for in five minutes of average climbing spread throughout the day one would be able to climb as many as 60 flights of stairs of 10 steps per flight, or one third of the way up the Empire State Building. Because of distorted beliefs about climbing time, it is probably also true that many persons with medical restrictions on their climbing could safely climb considerably more than their physicians are allowing them to do at present.

Since many physicians are faced with the problem of giving advice about climbing either fewer or more stairs, surely the question merits examination.

Investigation

In Boston, during pleasant weather in September, 1958, a team of three male employees of the John Hancock Mutual Life Insurance Company* set out to make calculations on how a part of the population climbs up stairs. For the most part, we clocked several hundred Boston subway stair climbers on different days at various times of the day and in different subway stations. We also tested ourselves in the subway and on the stairs of the 26 story John Hancock Building, the tallest building in Boston. We measured the height of more than a thousand steps in the subway and various buildings in town, including a number of street curbings.

*Lynn G. Wadsworth, Jr., Richard L. Letizia and the author.

Findings

The results and implications of the investigation are shown in Table I. To illustrate how the table is to be interpreted, figure 120 (near the center of the table) has been italicized. This means that, in actual climbing time, 120 flights of stairs of 15 steps per flight could be climbed in 15 minutes of average climbing. Average climbing is defined in the table as climbing two steps per second, or the rate climbed by 81% of the Boston subway stair climbers who were clocked.

One can also tell how many flights of stairs of any given number of steps could be climbed in any given length of actual climbing time — assuming the various rates of speed at which Boston subway crowds were observed to have climbed. Additional calculations may be made by using the figures shown for climbing one step at a time as the basic point of reference.

The table does not show the height of the sub-

way steps since they were found to vary from slightly less than six inches to seven and one-half inches in height, sometimes even in the same flight of stairs; the average in several subway stations being about seven inches high. What appeared significant to us was that the subway crowds, whether climbing as individuals or as a group, were observed to climb at the same proportionate rates of speed regardless of the variations in the height of the steps in the different subway stations.

As a speed test on a subway flight of 20 seven inch steps, a 32-year-old member of the team easily raced to the top in two seconds flat, at the rate of 10 steps per second. Even a 51-year-old member with a moderately severe leg disability cautiously managed five steps per second. In another test, a 26-year-old team member set a slow-to-average pace and climbed the 606 steps to the top of the 26 floors of the John Hancock Building in an elapsed time of nine minutes, stopping on the way for two one minute rest periods, thus reducing his actual climbing time to seven minutes.

In the table, the columns for very slow and very fast climbing have not been filled in because in both instances a range of speed is involved, thus making variable the number of flights that could be climbed.

TABLE I.
NUMBER OF FLIGHTS OF STAIRS CONSISTING OF 1, 5, 10, 15, 20 AND 25 STEPS PER FLIGHT THAT COULD BE CLIMED IN 1, 15, 30 AND 60 MINUTES BY SLOW, AVERAGE AND FAST CLIMBERS*

Boston Stair Climbers		2%	6%	81%	8%	3%
		Very Slow —1 Step per second	*Slow* 1 Step per second	*Average* 2 Steps per second	*Fast* 3 Steps per second	*Very Fast* 4-10* Steps per second
	Minutes		(Flights of Stairs)			
Number of Flights of 5 Steps per Flight	1		12	24	36	
	15		180	360	540	
	30		360	720	1,080	
	60		720	1,440	2,160	
Number of Flights of 10 Steps per Flight	1		6	12	18	
	15		90	180	270	
	30		180	360	540	
	60		360	720	1,080	
Number of Flights of 15 Steps per Flight	1		4	8	12	
	15		60	120	180	
	30		120	240	360	
	60		240	480	720	
Number of Flights of 20 Steps per Flight	1		3	6	9	
	15		45	90	135	
	30		90	180	270	
	60		180	360	540	
Number of Flights of 25 Steps per Flight	1		2.4	4.8	7.2	
	15		36	72	108	
	30		72	144	216	
	60		144	288	432	
Number of Flights of 1 Step per Flight	1		60	120	180	
	15		900	1,800	2,700	
	30		1,800	3,600	5,400	
	60		3,600	7,200	10,800	
						(Possible)
John Hancock Building — 606 Steps			10 min.	5 min.	3.3 min.	1 min.
Washington Monument — 898 Steps			15 min.	7.5 min.	5 min.	1.5 min
Empire State Building — 1,860 Steps			31 min.	15.5 min.	10.3 min.	3 min.

*The figures shown represent actual climbing time, that is, not counting periods of rest between flights, nor eventual slowing from fatigue.

Comment

The present study casts light on only *the time element* of how some people climb stairs wearing summer clothing and in ideal weather.

In addition, of course, in climbing stairs, foot-pounds are lifted, hearts labor and pulse rates mount. Oxygen and calories are rapidly consumed and a great deal of energy is expended. All of these factors are measureable and have been studied, including the energy costs of climbing down stairs.[1,2,3,4]

The question of climbing stairs, however, remains largely an individual problem in relation to a particular person's age, height, weight, health and general physical and emotional fiber. It is the patient himself who should be tested, and then counseled on the basis of his particular performance in relation to his total physical and emotional qualities. It is what the patient can and cannot tolerate as an individual that is important, not so much what others may or may not be able to accomplish. Tables showing the results of how other persons perform should be used as nothing more than informative background guides.

Summary

Based on a study of Boston subway crowds and selected individuals, this report outlines measurements of the amount of time consumed in climbing up stairs by slow, average and fast climbers. Opinions held by laymen and physicians concerning the amount of time spent in climbing up stairs probably are largely inaccurate. It is likely that most persons do not climb stairs nearly so much as they believe they do. It is possible that many persons could safely climb much more than their physicians allow them. The findings shown in Table I serve as a guide to the physician in counseling those concerned about climbing either fewer or more stairs.

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Emotional Stress in Dysmenorrhea

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The pains, stresses and tensions accompanying attacks of dysmenorrhea are considerably relieved by the use of the analgesic – relaxant described in this report.

According to some investigators,[1] the changes in psyche associated with dysmenorrhea are common, especially in emotionally sensitive women. Excitability is the result, rather than the cause, of recurrent dysmenorrhea. Headache, because of its relationship to the menstrual cycle, has been considered of endocrine origin. It may be caused by vasomotor disturbances or transient slight edema of the brain, temporary enlargement of the hypothalamus.[1] Premenstrual tension has been ascribed to abnormal sodium retention and subsequent brain edema as a result of hormonal derangement.

Other investigators[2] believe that pain experienced in dysmenorrhea is caused by uterine contraction, the greatest discomfort occurring during the first two days of menses when contractions are maximal. Usually, sedatives and antispasmodics suffice to relieve primary or functional dysmenorrhea.

Recently, it has become increasingly apparent that menstrual dysfunction can be attributed to emotional stress.[3] This becomes evident when it is realized that reports of symptomatic therapies for dysmenorrhea show improvement in 65% to 80%.[4] Wengraf[5] and Yaskin[6] have established a direct relationship between dysmenorrhea and neurosis. They found that the pain varied from month to month as a result of distressing events. Concentrated psychotherapy revealed multiple relationships between dysmenorrhea and almost every neurotic symptom of their patients. Some patients responded to suggestion and hypnosis; in others, the symptoms of dysmenorrhea were replaced by other neuroses.[7]

Dysmenorrhea probably occurs in more than 50% of all women[8] and, in general, tends to disturb the general health. It is a social and economic handicap because of the number of women whose gainful employment is interrupted.

Fortunately, little difficulty is encountered in determining dysmenorrhea of organic origin. Cases in which the cause cannot be established present a more difficult therapeutic problem.

In the absence of basic endocrine dysfunction, analgesic agents may be used to relieve the symptoms. Aspirin and similar substances, with and without sedatives and antispasmodics, and APC* are commonly employed for the relief of dysmenorrhea.

Because of widespread agreement on the significance of emotional factors in lowering the threshold of pain, it was believed that an agent capable of inducing quiescence as well as providing analgesia might be of greater value. Accordingly, for this study, an analgesic-relaxant® was employed which contained promethazine hydrochloride, mephentermine sulfate, acetylsalicylic acid and phenacetin.

Procedure

Twenty-two institutional patients, 16 to 35 years of age, complained of symptoms of dysmenorrhea. Since previous medication had failed to relieve the symptoms in 16 (76%) of 21 patients in this study (one patient did not receive previous medication), initial assessment was made of the effectiveness of this analgesic-relaxant preparation in the treatment of patients who have functional dysmenorrhea. The average age of onset of menses in these patients was 12.8 years. Menses occurred regularly in 11 patients and irregularly in 11. The duration of menses was from three to eight days, and the amount of flow varied from scant to extremely heavy. The emotional status of most of the patients was either fair or good; some of the patients were apprehensive and emotionally hyperactive. Two of the patients had previously been hospitalized for neuropsychiatric disorders.

*APC: Aspirin, 3 grains; phenacetin, 2½ grains; caffeine, ½ grain.

®Synalgos is produced by Ives-Cameron Company, Philadelphia 1, Pa.

The predominant symptoms of the 22 patients were anxiety and tension (17), headache (13), nausea (12), and low back pain (12). Six patients complained of frequency of urination, four of vomiting, and three of diarrhea (Table I). The degree of distress ranged from mild to severe. In two patients there was mild distress; in eight patients, it was moderate; and in 12 patients, it was acute.

Medication was administered orally in capsule form to the 22 ambulatory patients in this study. The dose varied from one capsule daily to two capsules four times daily. The duration of treatment varied from 24 hours to three days, depending on the requirements of the patients.

Four patients were receiving additional medication: chlorpromazine, promazine, meprobamate and a barbiturate at bedtime. Three patients had complicating illnesses: constipation (L.T.), regional sigmoid enteritis (S.A.) and glaucoma (F.K.).

Results

Symptoms were relieved in 19 patients (86%) who had dysmenorrhea. Of the 22 patients who were given from one to eight capsules daily, six (27%) obtained excellent results, 10 (45%) obtained good results and three (14%) obtained fair results. Three patients (14%) did not respond to medication.

Of the 17 patients who complained of anxiety and tension, 15 responded favorably; two did not. The two patients whose symptoms were not alleviated by the use of this compound (A. S. and C. J.) had not responded to previous medication.

Eleven of the 13 patients who complained of headaches also complained of anxiety and tension. This combination of symptoms is characteristic of premenstrual tension and frequently is accompanied by irritability and depression. Of the 19 patients who complained of tension headaches or anxiety and tension, or both, 16 responded to therapy, three did not. Of these 19 patients, one had responded to aspirin, with and without sedatives and antispasmodics, and APC.

Of the eight patients who complained of headache with nausea, five responded well, three did not. Five of seven patients who complained of headache, nausea, and anxiety and tension were improved. Of 12 patients who complained of low back pain, 10 responded favorably. With one exception, those who complained of vomiting, diarrhea, and frequency of urination in conjunction with other symptoms responded to medication.

Some of the patients required only one capsule daily for one or two days for relief of symptoms; others required two capsules four times daily for a period of three days. Of outstanding clinical importance was the fact that not one of the 22 patients complained of being drowsy, "dopey," or "jittery" as a result of taking this medication, regardless of the length of time the compound was administered.

Some of the patients who were emotionally unstable appeared to be calm and relaxed yet mentally alert after the administration of the medication.

Withdrawal of medication did not produce any ill effects.

TABLE I.
CONCURRENT SYSTEMIC SYMPTOMS

Patient	Headache	Diarrhea	Nausea	Low Back Pain	Anxiety & Tension	Vomiting	Frequency of Urination
V.L.			x		x		x
S.A.	x		x		x	x	x
N.W.				x			
L.T.		x	x		x	x	
K.H.					x		
C.J.	x		x	x	x		
J.B.					x		
R.M.			x	x	x	x	
J.S.	x						
Q.S.	x		x				
B.F.				x			
J.G.	x		x	x	x		x
F.L.	x		x		x		
C.L.	x				x		
W.C.	x				x		
F.K.	x			x	x		x
R.B.	x			x	x		
T.B.	x	x	x	x	x	x	x
H.M.			x	x	x		x
T.W.	x	x	x	x	x		
A.S.	x		x	x	x		
E.N.				x			
22	13	3	12	12	17	4	6

Summary

This medication provided relief to 19 (86%) of 22 women who had primary dysmenorrhea. Side effects were not observed during treatment. Emotionally hyperactive patients appeared to be calmer. None of the 22 patients complained of drowsiness and all were mentally alert.

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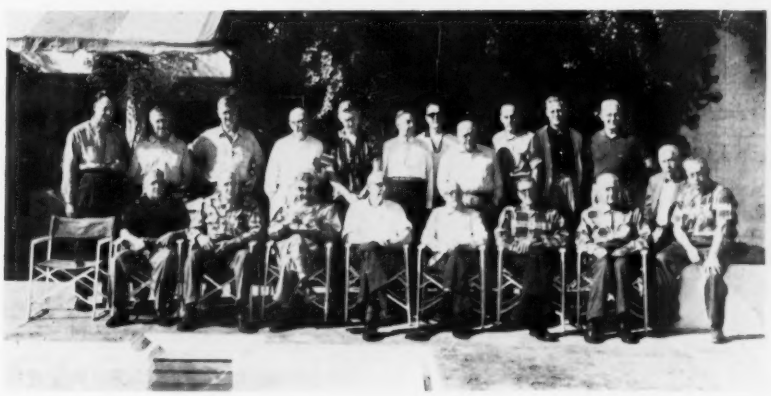
Paradise Inn, Phoenix, Arizona — Site of 1958 Ramazzini Meeting.

THE RAMAZZINIANS — 1958

Members of the Ramazzini Society in their November 21-23, 1958 meeting continued their long practice of assembly only at extraordinary places. The extraordinary this year was found at Paradise Inn in Phoenix, Arizona, by the Society's current servants Drs. L. E. Hamlin and J. F. McCahan, both of Chicago.

This medical conference departs far from the usual, characterized by the learned speaker pontification from an elevated dais, a rustling manuscript in one hand and a lantern slide pointer in the other. At the Ramazzini sessions the lecturn is apt to be replaced by the dining table. The rustling manuscript proves less provocative than rustling snowy linen napery. The table fork becomes mightier than the pointer. In this manner the Ramazzini medical conferences go about the edification and education of the members. At Ramazzini College there are no bans on investigation of the immediate effects of any beverages, and courses warning of the perils of high caloric intake temporarily are taboo. The Ramazzinians long ago learned that the worst of food is apt to be prepared in the largest kitchens and that the priceless things of life might appear in small packages. Such niceties make Ramazzini College one of the smallest and its college year one of the shortest, being limited to three days. Yet, withal, its educative effort is calculated to undo some effects of classical



Standing, Left to Right: Doctors McCahan, Sterner, Fleming, Johnstone, Lauer, Miller, Princi, Yant, O'Connor, Cruickshank and Wilkins. Seated, Left to Right: Doctors Irvin, Hamlin, Leggo, Kammer, McConnell, Draper, Legge, McCord and Kehoe.

Wine, Women and Song. From the Left: Hamlin, Princi, Sander, Johnstone, McCahan, Fleming.

education, occasionally described as the casting of sham pearls before real swine.

In one period the Ramazzinians dispense with all levity and pay the annual tribute to the old master, through the instrument of the Ramazzini Oration. Dr. Oscar Sander, one of the Ramazzinians, was presented as this year's orator. He developed the subject "New Concepts of the Pneumonconioses." He noted that heretofore it had been regarded as well established that only free silica in some form of SiO_2 possessed the property of enhancing the progress of pulmonary tuberculosis. Recently it has come about in animal experiments in which the animals were heavily exposed, that certain other dusty materials appear capable of increasing the spread of tuberculosis. The number includes talc, carborundum and coal. It does not follow as a ready consequence that present concepts of clinical silicosis in humans will be altered since workmen are unlikely ever to be exposed to equal levels of dust concentrations. At various times silicosis has been attributed to mechanical, chemical or electrical action. At the moment the nature of silicosis is linked with immunological responses akin to those of the allergic state. This learned presentation was in keeping with the overall purpose of the Ramazzini Society, to honor the memory of the illustrious Renaissance industrial physician, Bernard Ramazzini of Modena and Padua in Italy.

In current parlance the word "brainwashing" is commonplace, but that word, as accepted, possesses only evil connotations. Wholly overlooked are the opportunities for beneficent brainwashing. Whenever any error is corrected, any improper language made proper, any hatred dispelled, any latent charm liberated or any gloom displaced by joyfulness, then truly a degree or form of brainwashing has been applied, and

Oscar Sander, M.D., Presented the Annual Ramazzini Oration.

Doctors Kammer and Lauer Talk It Over.

all to the good. The wife of Sinclair Lewis once stated that it would be impossible to be around Sinclair Lewis for ten years without becoming educated. The implication was that regardless of the state of the raw material at the outset, by the end, education would have become inevitable. So, by remote paraphrase let it be claimed that no physician can be a Ramazzinian for ten years without having undergone a thorough beneficent brainwashing.

Every year some new attribute of the Ramazzini Society comes to the fore. Pallas Athena possessed so many attributes and appellations that they threatened to wear her down more than her armor. In like manner the Ramazzini Society is burdened by its own attributes. This year the discovery is that that body, dedicated as it is to the pursuit of hedonics along with other medical wisdoms, is the greatest brainwashing station known to occupational health.

If these newly discovered obligations are survived, the Ramazzinians next will show themselves at the Signory Club near Montreal, subject to the ministrations of the 1959 servants, Drs. Harvey Cruickshank and Fritz Parney, both of Canada.

Occupational Disease Cases

Occupational disease cases, although relatively few in number, are substantially more costly than cases resulting from accidental injuries, according to Angela R. Parisi of the New York State Workmen's Compensation Board. Such cases comprised 3% of all compensated cases closed in 1956 in New York, but they accounted for 6% of the amount of Workmen's Compensation awarded in all cases closed that year. These awards do not include amounts paid for hospital and medical care.

Occupational diseases are the result of occupational activity or exposure to injurious substances, usually over a period of time. They result from contact with chemicals and toxic substances, and also from continued exposure to dangerous conditions such as extremes of temperature, prolonged dampness and compressed air. Some skilled workers, such as granite cutters and molders in foundries, may suffer from silicosis or other dust diseases. Silicosis is a disease which develops in the lungs of workers exposed to dusts containing silica. Other occupational disease cases are caused by continuous contact, repeated motion, pressure or shocks, or constant strain due to body position.

More than 40% of the occupational diseases were cases of dermatitis (venenata), i.e., a skin inflammation caused by the local action of an irritant substance, such as a chemical or external poison. Some common sources of irritation may be found in soaps and cleansing powders, petroleum products and distillates, dyes, paints, cosmetics, foodstuffs and poisonous plants.

Dermatitis disabilities were generally of a temporary nature and less costly than most other occupational disease cases. The 1,549 dermatitis cases closed by the Board in 1956 averaged $698 per case.

Silicosis cases, although relatively few, were serious and costly. Only 111 of the 3,715 occupational disease cases closed in 1956 were silicosis cases. These claimants, comprising only 3% of all occupational disease cases closed with awards, received indemnity benefits of $1,707,652, an average of $15,384 per case, which was more than one-fourth of all compensation awarded in occupational disease cases. Under the Workmen's Compensation Law, compensation is payable only for total disability or death resulting from silicosis or other dust diseases, not for partial disability caused by the dust diseases.

The seriousness of silicosis is evident in that 47 cases, or two out of every five silicosis and other dust disease cases closed with the awards in 1956, resulted in awards to the beneficiaries because of the death of the claimant due to the disease.

Workers in all major industry groups were represented among the occupational disease cases closed in 1956. Manufacturing led the major industry groups with 1,852 cases. The service industries were next with 890 cases, followed by wholesale and retail trade with 481 disabilities.

An analysis of the causes of occupational diseases showed that harmful substances, excluding dusts, but including such things as poisonous plants, foodstuffs, soaps, oils, dyes, ink, paint, organic solvents, acids, alkalis and other injurious chemicals were responsible for 59% of such cases.

Management and Union Health Programs

The Coordination of Care and Public Understanding and Acceptance of Health Services

• LEONA BAUMGARTNER, M.D., Commissioner of Health, and
• MARGARET C. KLEM, Consultant, Medical Care Programs
New York City Department of Health

A continuation of a bibliography of sources of information on various types of health programs and services and their interrelationships, begun in Industrial Medicine and Surgery in December, 1958. The final two sections will appear in a future issue.

II. Labor Union Health Activities

The major incentive to the development of union-sponsored health plans came in 1942-45 with the National War Labor Board's policy permitting the provision of fringe benefits during the years when wage increases were blocked, and the Bureau of Internal Revenue's ruling that, for income-tax purposes, payments for employee insurance plans could be deducted from gross income as a proper business expense. These decisions were followed in 1948 by rulings of the National Labor Relations Board that employers were required to bargain over pensions and insurance benefits, and that they could not institute or change a group insurance plan without consulting the statutory bargaining representatives. Later, in 1951, the War Stabilization Board ruled that inclusion of health and welfare benefits under collective bargaining was not in conflict with the objectives of the Defense Production Act.

In the field of health, unions have traditionally stressed preventive services, the provision of care early in an illness, rehabilitative services, and the advantages of service benefits as contrasted with cash benefits. Most of the funds obtained under collective bargaining, however, have been used for the purchase of contracts from Blue Cross and Blue Shield (medical society) plans, which provide a combination of service and cash benefits, and for group contracts of commercial insurance companies which provide cash benefits only. Some unions have purchased coverage from community prepayment plans such as Health Insurance Plan of Greater New York and the Kaiser plans on the West Coast. Others have established union health centers which provide union members, and sometimes their dependents, with services ranging from solely diagnostic services to a wide scope of benefits including care at the union health center, the home and the hospital. Although the union health centers in the United States organized on a group-practice basis make care available to only about one million persons, their number is increasing, and their influence far exceeds their size since they illustrate a form of health protection desired by a large proportion of union members.

The larger unions have on their staffs experts in health and welfare programs and their officials are well versed in the services provided and the cost of various types of health insurance programs. In some areas, notably on the West Coast, the unions have been working with the medical profession and health agencies toward establishing well-rounded services under union health plans to supplement but not duplicate other services in the community. For the most part the staffs of the smaller unions lack experts and officials with major interest in health or welfare fields. Local health departments can render a service by providing consultation to both union and management on various types of available health insurance programs and development of working relationships between these programs and other community health services.

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III. Voluntary Health Insurance

The term "voluntary health insurance" usually means protection against hospital, medical or surgical bills through cash benefits, the provision of service benefits, or a combination of cash and service benefits. These benefits are provided by individual or group policies of insurance companies; by Blue Cross Hospital plans, by Blue Shield (medical society) plans, or by independent plans which include plans sponsored mainly by labor unions, management, consumers, or groups of physicians. The term does not include plans which provide protection against loss of income on account of occupational illness or injury, or the preventive services provided by management at the work place, usually referred to as in-plant health services.

At the beginning of 1958, 121.5 million persons, about 70 out of every 100 men, women and children in the United States, now have some degree of protection against hospital, surgical or medical bills under voluntary health insurance.

The growth of hospital and surgical coverage was well started by 1942. However, events of that and later years, mentioned in the description of the development of labor union health and welfare plans (see Section II) account for a large part of the very rapid growth of all types of voluntary health insurance after that date.

The development of voluntary health insurance up to the present has been more in the expansion of membership rather than in extending benefits, especially preventive services. These are items in which labor unions have a keen interest. Because labor has acquired influence and responsibility in the health field through the coverage of its members under various types of prepaid medical care programs, this desire on their part for emphasis on prevention cannot be ignored.

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ABSTRACTS

Following are abstracts of papers on occupational health presented before La Segunda Reunion de la Medicina del Trabajo, a meeting of industrial physicians from the United States and Latin American countries, sponsored by the School of Medicine of the University of Miami, Coral Gables, Florida, and the School of Medicine, University of Havana, Havana, Cuba.

COMPENSATION FOR OCCUPATIONAL DISABILITY IN LATIN AMERICA

• JOHN J. BLOOMFIELD
Regional Consultant in Industrial Hygiene
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All of the 20 Latin American republics have enacted social welfare legislation designed to assist the worker to cope with the economic burden brought on by disabilities of all types, be they work-connected or not. Economic losses due to disability have been found to be large in all of these countries in spite of the relatively low cash benefits paid for incapacitation. This phenomenon is largely due to the fact that emphasis has been on compensation and not on prevention. In an attempt to overcome some of these losses and to safeguard the health of the labor force, some of the more industrialized countries have begun to develop modern occupational health programs with the technical cooperation of the United States of America. The present discussion points out that in addition to developing programs of prevention there is also a great need to review existing compensation laws, so that these may be modernized and many of their limitations, as discussed in this paper, may be removed.

COMPENSACION POR INCAPACIDADES PROFESIONALES EN LA AMERICA LATINA

• JOHN J. BLOOMFIELD
Consultor Regional en Higiene Industrial
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Todas las 20 repúblicas de la América Latina han promulgado una legislación social de bienestar diseñada para asistir al trabajador a hacer frente a la carga económica causada por incapacidades de todas clases, estén relacionadas al trabajo o no. Numerosas pérdidas económicas debidas a la incapacidad se han encontrado en todos estos países, no obstante los beneficios de dinero relativamente bajos que se pagan por incapacitación. Este fenómeno se debe largamente al hecho que el énfasis ha sido en compensación y no en prevención. En un intento de salvar algunas de estas pérdidas y de proteger la salud de las clases obreras, algunos de los paises más industrializados han comenzado a desarrollar programas modernos de salud ocupacional con la cooperación técnica de los Estados Unidos de América. La presente discusión hace notar que además de el desarrollo de programas de prevención, hay una gran necesidad de revisar las leyes de compensación existentes, de modo que éstas sean modernizadas y muchas de sus limitaciones, como se discute en este trabajo, sean suprimidas.

DISTURBANCES IN PULMONARY FUNCTION OF OCCUPATIONAL ORIGIN

• JOSE BOCLES, M.D., • KENNETH JOHNSON, B.S.
• ASHER MARKS, M.D.
From the Pulmonary Function Laboratory and Department of Medicine, University of Miami School of Medicine, Coral Gables, Florida

Although the association of disease of inhalation of specific dusts has been known for many years, physiologic interest in this group of abnormalities has lagged for several reasons: widescale functional testing is of recent origin, physiologic alterations are frequently non-specific and may be necessary to identify the specific agent, or even to relate radiographic and physiologic abnormality with occupational exposure; many of the techniques involved are still so crude that early or localized disease may escape detection.

Despite these objections, the advantages of physiologic evaluation here are significant. Repeated studies give insight, not only into the mechanism of disease and symptomatology in the particular patient, but physiologic evaluation also gives insight into the manner with which the lung responds to any insult, be it chemical, infectious, circulatory, allergic or degenerative; functional evaluation makes possible comparison of disability within groups and allows evaluation of the effects of therapy.

Diseases of industrial origin produce different physiologic patterns. Certain dusts, silica and cotton, for example, lead to obstructive airway diseases. Other materials, beryllium for example, produce primarily impairment in oxygen exchange.

ALTERACIONES FUNCIONALES PULMONARES DE ORIGEN OCUPACIONAL

• JOSE S. BOCLES, M.D., • KENNETH M. JOHNSON, B.S., • ASHER MARKS, M.D.
del Laboratorio de Funciones Respiratorias y Departamento de Medicina, Universidad de Miami, Coral Gables, Florida

Aunque la asociación de enfermedad con la inhalación de polvos específicos ha sido conocida durante muchos años, el interés fisiológico por este grupo de anormalidades se ha retardado por varias razones: las pruebas funcionales de amplio alcance son de reciente orígen: las alteraciones fisiológicas son frecuentemente inespecíficas y biopsias pueden ser necesarias para identificar el agente específico, o aún relacionar la anormalidad fisiológica y radiográfica con la exposición ocupacional. Muchas de las técnicas empleadas son todavía tan imperfectas, que la precoz o localizada enfermedad puede pasar inadvetida.

A pesar de estas objeciones, las ventajas del valoramiento fisiológico son significantes: los estudios seriados permiten la comprensión íntima, no sólo del mecanismo de la enfermedad y la sintomatología de cada paciente en particular, sino que tambien aclaran la forma con que el pulmón responde a cualquier insulto, sea químico, infeccioso, circulatorio, alérgico o degenerativo. El valoramiento funcional hace posible la comparación de incapacidad dentro de los grupos y permite justipreciar los efectos del tratamiento.

Enfermedades de origen industrial producen diferentes patentes fisiológicas. Ciertos polvos, por ejemplo, conducen a enfermedades obstructivas de las vias aereas; otras, producen originalmente alteraciones en el intercambio respiratorio del oxígeno.

THE TESTING OF FOOD ADDITIVES FOR SAFETY

• WILLIAM B. DEICHMANN, PH.D.
Professor and Chairman, Department of Pharmacology, University of Miami School of Medicine, Coral Gables, Florida

The author agrees with Dr. H. E. Carter of the University of Illinois that real advances in the mechanism of cancer are likely to come from the biochemical laboratory. It must be known what happens in cells — and these need not be human cells — before we will ever really know what went wrong in man afflicted with cancer. A plea is made for more intensive and broader animal cancer research with the primary aim of searching for human counterparts. Human epidemiological studies are important. They can point out those carcinogens missed by animal studies. The importance of post-mortem examinations and microscopical studies of organs and tissues showing the presence and type of cancer is equally obvious.

One final thought, since most of us confine our research to one particular area, we are inclined to draw general conclusions from individual bits of information. Obviously we must use all available data. In addition, we must most carefully evaluate all facts and factors which surround the specific use of a material before deciding that the compound is safe, or that it should not be used as food additive.

CONTROL DE LAS SUSTANCIAS CONSERVADORAS DE ALIMENTOS

• WILLIAM B. DEICHMANN, PH.D.
Profesor Titular de Farmacología, Escuela de Medicina, Universidad de Miami, Coral Gables, Florida

El autor enjuicia la posible acción carcinógena de las sustancias conservadoras de alimentos.

Hace énfasis, de acuerdo con el criterio del Dr. H. E. Carter, de la Universidad de Illinois, en que el laboratorio bío-químico es la mejor fuente de progreso en el conocimiento del mecanismo del cáncer. Antes de conocerse los cambios que produce el cáncer en el organismo humano, es conveniente conocer lo que se produce en las células, no necesariamente humanas. El autor expresa la urgencia de estudiar mejor el cáncer en los animales a fin de su aplicación en beneficio del hombre. Son también importantes los estudios epidemiológicos humanos, que pueden señalar los carcinógenos no detectados en animales. Destaca la importancia de la anatomía e histología patológicas.

Como la mayor parte de los investigadores se limitan a un area particular del conocimiento, las conclusiones son forzosamente parciales. Es obvio de que debe utilizarse toda la información disponible. Se debe ser muy cuidadoso en la evaluación de la seguridad de las sustancias conservadoras de alimentos.

EVALUATION AND PROTECTION OF OCCUPATIONAL RADIATION EXPOSURE

• ROBERT G. GALLAGHER
Health Physicist, Liberty Mutual Insurance Company, Hopkinton, Massachusetts

The principles of radiation protection have become well established as prime considerations for any practical use of radiation. These principles include such factors as the engineering of radiation shielding, remote handling equipment, designs to prevent accidental criticality and special exhaust ventilation to control the most hazardous materials known to man. The degree of radiation protection provided for each particular radiation hazard must be evaluated in terms

of the worker's ability to utilize this protection and to apply his knowledge of radiation safety for the protection of himself and his fellow workers. The health physicist can engineer certain radiation protective designs, supply radiological safety training and devise methods to evaluate the effectiveness of these measures in reducing radiation exposures to a practical minimum. However, if the radiation protection program is to be complete it must include medical surveillance for all radiation workers. The medical specialist who assumes this responsibility must be cognizant of the particular radiation hazards, the control measures being taken and their effectiveness as indicated by the results of personnel radiation monitoring and bioassay. The effectiveness of the program will depend on good liaison between the physician and the health physicist. This paper attempts to evaluate certain features of modern radiation protection programs and illustrate specific parts of these programs which require the medical doctor and health physicist to share in the evaluation and protection of radiation exposures.

LA EVALUACION Y PROTECCION DE LAS PERSONAS QUE ESTAN EXPUESTOS A LA RADIACION EN SU TRABAJO

• ROBERT G. GALLAGHER

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Los principios de protección contra la radiación han sido bien establecidos como consideraciones primárias, tratándose de cualquier uso práctico de radiación.

Estos principios incluyen factores como ingenieria asociada con protección contra la radiación, equipo manejado por control remoto, dibujos para prevenir acidentes criticales y ventilación especial de escape para controlar los materiales los mas peligrosos conocidos al hombre. El grado de protección prevenido para cada riesgo de radiación tiene que ser avaluado según la inteligencia del empleado para poder utilizar esta protección, y de aplicar este conocimiento de radiación para la protección suya y de sus compañeros. El físico encargado de salud puede dibujar ciertos métodos de protección contra la radiación, proveer entretenamiento de seguridad, e inventar metodos que evaluarán la efectividad de estas medidas para reducir las exposiciones a la radiación a mínimos practicos. Sin embargo, si el programa de protección contra la radiación ha de ser completo, tiene que incluir vigilancia médica para todos empleados afectados. El especialista médico quien asuma esa responsabilidad tiene que ser enterado de los peligros pertinenentes a la radiación, las medidas de control que están en vigor, su efectividad tal como aparece de los resultados de vigilancia sobre el personal afectado, y el procedimiento de bio-assay. La efectividad del programa dependará de buena coordinación entre el médico y el físico de salud. Este memorandum trata de evaluar ciertas caracteristicas de programas modernos para protección contra la radiación, e ilustrar partes específicos de dichos programas que necesitan que el médico y físico de salud trabajen juntos en la evaluación y protección de los que han estado expuestos a la radiación.

NICKEL AND COBALT POISONING

• RAFAEL PENALVER, M.D.

Instructor, Legal Medicine and Toxicology, University of Habana, School of Medicine. Secretary, Cuban Industrial Medical Association, Medical Director, "Habana Hilton Hotel" and "Omnibus Metropolitanes, S.A."

I. Nickel: The properties, geographical distribution, uses, sources of exposure and symptoms of intoxication by this metal and its compounds are discussed. Nickel carbonyl is given special consideration. The literature has been reviewed, particularly in respect to intoxications.

II. Cobalt: Reference is made to the action of the metal and to certain of its salts on man and experimental animals.

III. Attention is called to the potential hazards associated with the mining of nickel and cobalt in Latin-America.

INTOXICACION POR NIQUEL Y COBALTO

• DR. RAFAEL PENALVER

Adscripto a la Cátedra de Medicina Legal y Toxicología de la Escuela de Medicina, Universidad de la Habana. Secretario de la Sociedad Cubana de Medicina del Trabajo. Director del Departamento Médico del Hotel "Habana-Hilton" y de "Omnibus Metropolitanos, S.A."

I. Níquel. Se refieren las propiedades, distribución geográfica, usos, fuentes de exposición y manifestaciones clínicas producidas por el metal y sus compuestos, con particular consideración al carbonilo de níquel. Se revisa la literatura en lo relacionado al tratamiento.

II. Cobalto. Se señalan los trabajos experimentales relacionados con la intoxicación producida en los animales de laboratorio, considerándose de modo particular la acción biológica del cobalto metálico, asi como sus efectos nocivos en el hombre.

III. El interés de este trabajo es llamar la atención de los especialistas latino-americanos sobre el riesgo potencial ligado a la perspectiva de un intenso desarrollo de la minería del níquel y del cobalto en los países de Latino-América.

Economic considerations often dissuade retirees from seeking medical aid before irreversible damage has been done.

PHYSICAL MEDICINE AND REHABILITATION As Related to Retirement

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The medical problems that confront the industrial workers on or after retirement are not grossly different from those facing anyone reaching an age beyond the sixth decade. However, we have found that retirement superimposed upon advancing years creates special problems with which the physician must cope.

First let us consider the economic aspect of retirement as related to medicine. The vast mapority of our retired population are sitting in a precarious position economically. With social security and various retirement plans, most people have some income for the last years of life. All too frequently, this is just enough income to purchase the bare necessities of life and any financial crisis may result in indigency. We are speaking of the years past 60 when chronic illness is far more prevalent than in the younger age groups. Illness is the crisis which upsets an insecure economic balance. Many times patients will not continue hospital and medical insurance plans after retirement, because they feel they can not afford the premiums. So it takes only a relatively short illness to make the average oldster at least medically indigent.

Another factor in this respect is the reluctance on the part of the retiree to have regular medical checkups because of economic considerations. The cost of regular preventive medical examinations seems like too great a bite out of the already meager funds. Hence the opportunity to diagnose incipient illness at a time when something can be done about it too often is lost.

Many cases of amputations in the elderly could have been avoided had the patient gone regularly for adequate foot care and instructions in proper foot hygiene. We all can quote case after case of minor lesions of the toes being neglected or mistreated -- only to go on to gangrene and amputation. Many strokes could have been avoided had circulatory management been adequate. Even at best, the inexorable process of aging continues, and in spite of preventive medicine techniques as we know them today, chronic illness increasingly will occupy a larger and larger part of the practice of medicine. Infectious illness is playing a smaller part in medical practice because we now have the tools to adequately and quickly treat these problems. Good surgical techniques and care of acute trauma keep people alive to reach the age when chronic illness is prevalent.

This medical economic complication of retirement will become a greater rather than a lesser factor in our economy. Steps should be taken to insure adequate medical care both from treatment and preventive medicine standpoints for the retiree. Economics should not stand between the senior citizen and medical care.

Another problem which faces medicine today is the need to orient the physician in the techniques and philosophy of geriatric care. I am speaking in a broader sense than merely diagnosis and treatment of specific pathological processes. This is the easy part of geriatrics. To rehabilitate a patient requires more than the reversal or arrest

of pathology. The physician has an opportunity not available to most. He is in a position to learn a great deal about the individual as a whole personality and should be able to provide the patient with advice regarding personal and community resources which will enrich the patient's life. Let us take an example or two to illustrate this point. First let us consider a hemiplegic due to cerebrovascular thrombosis. If the physician considers only the pathology involved, he will give supportive, life-saving treatment and then will have nothing further to offer the patient. He will not be able to reverse the pathological process which consists largely of destroyed brain cells. He will not be able to replace those cells or do anything to enable the body to grow new ones. If he is interested only in the pathology involved, he will be forced to admit that he can do no more for the patient. Now if the physician is a little better oriented in rehabilitation techniques he may prescribe appropriate physical therapy and nursing procedures to teach the patient to use the remaining functional segments to take over for those parts of the body which have been involved as a result of the stroke. If this is as far as he goes, he will still be failing in his responsibility to the patient. To care fully for such a patient, the physician should go beyond the point of mere physical restoration. He should be able to evaluate the need for other services and forces that can be brought to bear on the case. What is the psychological impact of the illness on the patient? Are the services of a psychiatrist needed or can a clinical psychologist do all that is necessary to help with the adjustment to the illness? Perhaps the physician himself can give all the psychological support needed in that particular case. The important thing is that the attending physician know his own abilities and limitations in this respect and be aware of other resources that might add significantly to the total management of the patient.

In addition to psychological support which primarily deals with the patient's ability to accept his disability, one must be cognizant of the social implications of disabling illnesses. Few physicians have the time or training to delve into all the social facets of any given case. Usually the services of a trained medical social worker are needed to gather such information and to interpret the medical opinion in light of the existing situation. Some of these problems include evaluation of degree of acceptance of the disability on the part of the family and the community, economic status present and future, physical facilities in the home which might influence care of the patient.

The social worker is the logical aide to maintain liaison between the patient, the physician and other agencies in the community. Here I speak of agencies both public and private which might provide services to improve the total management of the patient, whether from the purely physical standpoint or from a more nonspecific social approach. Thus the visiting nurse service can be brought into the picture to give nursing service within the home. Liaison with the clergy for spiritual help in adjusting to the physical problems involved can be handled by the attending physician, but the same contact can be made by the well oriented medical social worker with good interpretation of the medical findings and with much saving of the physician's time.

The fourth facet of a true rehabilitation philosophy is vocational. We who work with the severely disabled are convinced that all human beings no matter how severely maimed must be able to contribute goods or services that may have a value to someone else before they can be considered rehabilitated. Too often, the vocational phase of rehabilitation is thought of only in terms of gainful employment. In our hemiplegic case and in most chronically ill among the retired age group, job objectives are out of the question. But if the patient can be made to realize that self care in itself relieves one or more other members of society from the task of that care, then our patient has achieved a vocational objective in terms of our definition. Furthermore, the vocational aims should include planning for the hours, days and months of inactivity imposed by virtue of the chronic illness. If the patient is permitted just to sit and brood about his tough lot in life, there will be atrophy of disuse not only of the remaining muscles, but of the power to cerebrate. Hence, careful planning to fill the empty hours and give the patient motivation to function at a maximum level compatible with the disability is a part of the vocational objective. The objective of "having fun" should also be included in the category.

This concept of rehabilitation is not original with us at the Peoria Institute. This quadrilateral approach in which medical, psychological, social and vocational services are used is the framework on which most of the comprehensive centers in the country build their staffs. It is also written into the federal legislation, making monies available for construction of new rehabilitation facilities and for expansion of existing institutions. I am not advocating that every hospital or every village develop a rehabilitation center with the complete services outlined. There is not enough trained personnel nor is there a demand for these extensive and expensive services everywhere. I am suggesting that the physician and the hospital develop an awareness of this philosophy of medical care and gear their indi-

vidual programs to the need of the community. Eventually there will be enough comprehensive centers available about the country to take care of those patients who can not be handled at the average general hospital level.

A case will illustrate what is too often true in the practice of medicine. Here was interest in specific pathology, but lack of concern about the individual as a whole. At a cardiac clinic in one of our medical schools an elderly lady presented herself with the primary symptom of "shortness of breath." After thorough study, no cardiac pathology was found and the diagnosis of moderate emphysema was made. This explained the dyspnea adequately. The medical student who worked up the case asked the attending doctor, "How do you handle these cases in your private practice?" The attending man replied, "I fidget around in my seat until the patient gets the point and leaves." How much better it would have been for our teacher to have explained that it is possible to interpret chronic irreversible pathology in terms understandable to the patient. He should have counseled the student not to drop the case at that point, but to pursue it and find how the symptoms of dyspnea affected the life of the patient. Was it just worry regarding presence or absence of heart disease or were there social or vocational problems created by the disease process? The management of the case then would be geared to the presenting problems. Certainly no specific cure or treatment for the emphysema was a prospect, but a wealth of potential in terms of care of the patient.

The easy part of geriatrics is the medical part. Unfortunately our experience regarding diagnosis and treatment of the senior citizen especially those in lower income brackets has been somewhat discouraging. Recently a man and his wife were admitted to the geriatrics rehabilitation program. They were beyond 75 years of age and, although still living independently in their own apartment, they appeared quite feeble. They had sought medical aid because of their increasing weakness and several other symptoms. The symptoms and the weakness were attributed by the attending physician to their advancing years. On admission to the geriatrics rehabilitation program, thorough medical workups were done with the findings that the woman had a malignancy of the stomach and the man active tuberculosis with positive sputum. Why were these symptoms not thoroughly investigated earlier? The patients were medically indigent and were being supported by a public agency which pays notoriously low fees for medical care. The attending physician in the case is a quite capable and respected generalist. He would never neglect a patient deliberately, but the combination of aging, indigency and difficult relation with the public agency combined to make good medical evaluation and care highly difficult. Oldsters do become ill and, although age in itself with its concomitant deteriorating properties can cause symptoms, it behooves us to be alert to the presence of pathological processes about which we can do something definitive.

Summary

I have briefly called attention to the interrelationship between medicine and economics, outlined the philosophy necessary in comprehensive rehabilitation and emphasized the need for better indoctrination of the medical profession in geriatric techniques. The group represented here, by virtue of its unique relationship with industry and with the private practice of medicine, has an opportunity in making medical care for our senior citizens a more dynamic and vital force in the framework of retirement.

Morale Builders

The quality of supervision is one of the greatest influences on employee morale, but it's not the only factor that has to be considered. After a long-term study, Drs. Rensis Likert and Daniel Katz of the Survey Research Center at the University of Michigan list these other important morale builders:

Size of work group (the larger the group, the lower the morale); recency of promotion (morale is, of course, highest among men recently promoted); and type of work (the more monotonous the job, the lower the morale). —Edison Electric Bulletin

Books

Alcoholism

by *A. Z. Pfeffer* (New York: Grune & Stratton, Inc., 1958) $4.50

The second book publication in the series on occupational health, sponsored by Grune and Stratton, appropriately is devoted to alcoholism in all of its aspects. While alcoholism is no characteristic occupational disease, many industrial pursuits contribute incentive to alcoholism. The purpose of this monograph is well stated in the introduction, a brief portion of which is quoted:

"This monograph is intended to serve physicians as a handbook for the management of alcoholic patients. It is especially aimed at the needs of the physician in industry where the occupational features of alcoholism are more easily seen. Though the problem of medical management is essentially the same for industrial physicians as it is for others, there are certain areas in which the problem is highlighted. The industrial physician is in a notably advantageous position to help motivate the alcoholic to seek assistance."

The problem of alcoholism has been with us since man learned about fermentation, and it is often mentioned in the Bible. However, it has only been in the past 15 years that medicine has directed a more intense interest toward the specific laboratory and clinical problems of this illness, and only in the past 10 years have various industries approached it with vigor.

Alcoholism is a complicated disease touching on a multiplicity of disciplines — biochemistry, physiology and pathology of various systems, especially the gastrointestinal and nervous systems. There are also important psychiatric, social and cultural implications. Most physicians are confronted with some aspect of alcoholism in their work, and it is hoped that this volume will provide a practical orientation to this complex medical problem.

The volume of medical literature on the various facets of alcoholism is large and the points of view are numerous and diverse. The goal of this volume is to present those concepts and treatment procedures that have borne the test of extensive practical application.

Exacting studies of the number of alcoholics in industry are lacking, but conservative statistical estimates based on the results of spot surveys indicate that 2,060,000 alcoholics are regularly employed; 1,370,000 alcoholic males are employed.

The Early Detection and Prevention of Disease

ed. *John P. Hubbard* (New York: McGraw-Hill Book Co., 1957) $7.50

One of the mysteries of medicine is the continuing aversion of the clinician to preventive medicine. Of lip service there is no dearth, but as to practice the returns are scanty. In some general hospitals it is easier to arrange for a brain tumor operation than to arrange for one smallpox vaccination. These clinicians are disposed to make the pediatrician the repository of much that is preventive, yet from time studies it has been determined that pediatricians devote only about one percent of their time to preventive immunization.

This book, without saying so, seeks to serve as the honest marriage broker trying to arrange a real wedding between preventive medicine as the bride and clinical medicine as the groom. The bride stands eager and hopeful — the wary groom stands reluctant. Toward these nuptials the editor has assembled an array of contributions by 28 physicians, all tending to tie the preventive closer to the clinical. These contributions originated in a series of symposia constituting one of the regular postgraduate courses of the American College of Physicians. It is noteworthy that the recognized motivator of these symposia was Dr. Norbert J. Roberts, an industrial physician, who, with another industrial physician, Dr. Lemuel C. McGee, contributes to this volume. It has become an old saying in industrial medicine that in their scientific meetings, industrial physicians only talk to one another. That may be supplemented by noting that industrial physicians are prone only to read what has been written by other industrial physicians. In this instance, good as is the material contributed by the industrial physicians named, pass up their writings unless all is read, in order to see how succinctly other physicians write in their portrayal of the inescapable closeness or even oneness of preventive and clinical medicine.

Great is the emphasis in the usual doctor's office and in the hospital, that anyone who appears for medical services or guidance must be labeled "patient." Even the robust athlete who appears for an insurance examination perforce is styled a patient. At one point in this book, that semantic deficiency is faced and the appraising contributor turns to the Latin and comes up with the word "valent," which means strong, robust and valiant and thus, sometimes appropriate. Is it too much to recognize that in the medical world there are valents as well as patients?

Any science must have grown to maturity

in order to indulge in printed persiflage. If that be the rule, then preventive medicine has attained to the age of tolerable whimsy since, in connection with the presentation on the gastrointestinal system, this facetiously labeled test meal appears: Pate de foie gras, Tabasco, Knockwurst with Sauerkraut, Suet Dumplings, Sliced Cucumbers with Whipped Cream, Hot Mince Pie, Sharp Cheddar Cheese, Sodium Benzoate Demitasse and After-dinner Charcoal.

The inference is that the consumer of this meal who ends up with no gastric rebellion, so far as his gastrointestinal tract is concerned is in need of neither preventive nor clinical medicine.

Practical Leads to Puzzling Diagnoses

by *Walter C. Alvarez* (Philadelphia: J. B. Lippincott Co., 1958) $9.00

The title of this book is not revealing as to its contents. Library cataloguers are among the ones likely to be puzzled. The secondary title "Neuroses That Run Through Families" discloses much more. Yet the author, in his well known conversational style, veers in all directions from that secondary title through chapters on such items as schizophrenia, psychoses in children, epilepsy and the manic-depressive patient. No fault is found with that procedure for this is that sort of book. The psychiatrists, among whom the author is not one and he makes that clear from the beginning, are unlikely to cheer even in whispers over this book. But well they might, and lustily, for this provides for the general run of physicians, the man on the medical street, a convincing flow of horsesense guidance that these physicians would like to have from the psychiatrists and seldom can pry loose.

This book has two special virtues. One is found in this swing of a pendulum toward renewed recognition that "blood will tell" in mental disorders. In late decades the family background all too often has been buried under the environment. The second is found in the pursuasive effort addressed to all physicians toward more complete family background histories as essential to the total medical history.

Cardiac Arrest and Resuscitation

by *Hugh E. Stephenson* (St. Louis: C. V. Mosby Co., 1958) $12.00

The annual deaths from sudden cardiac arrest, as they relate to surgery and anesthesia alone, number more than the annual deaths from a combination of poliomyelitis, multiple sclerosis, scarlet fever, typhoid, diphtheria and several of the other commonly mentioned diseases.

It has been urged that cardiac arrest is "the most catastrophic event that occurs in medicine." It is possible that this statement was suggested not only by the unexpectedness and suddenness with which cardiac arrest occurs, but also by its occurrence in almost any age group, under almost any type of condition, in patients who have had no previous cardiac disease. Few emergencies are remembered as vividly as those of sudden cessation of cardiac output — an emergency experienced by almost every surgeon and anesthetist. Ineffectual resuscitation is still appallingly frequent. From our observations we believe that almost every physician loses his first case of cardiac arrest.

This book by several contributors and dealing with 1,700 occurrences of cardiac arrest, forcefully faces the requirements in meeting these emergencies. If, heretofore, the physician has gained vital experience through the loss of his first instance of cardiac arrest, that deplorable happening need not occur. That first case should not be lost nor any subsequent ones.

The Chemical Prevention of Cardiac Necroses

by *Hans Selye* (New York: Roland Press Co., 1958) $7.50

Cardiac necrosis is the most common cause of death in man. It may present itself in many forms, and most of its varieties are traditionally considered to be quite unrelated. The massive cardiac infarct caused by acute thrombosis of a coronary vessel surely appears to have little in common with such lesions as the necrotizing myocarditis of diphtheria, typhus or other infectious diseases, the "spotty myolysis" that occurs in certain viral infections, endomyocardial fibrosis, hypokalemic cardiopathy, Fiedler's "isolated myocarditis," and the "nonspecific chronic myocarditis" that eventually develops in everybody who lives long enough. Indeed, it would be difficult to imagine a group of maladies more dissimilar than these as regards their etiology, clinical course and morphologic characteristics. Yet, they all have one feature in common: necrosis of cardiac muscle fibers which are replaced first by inflammatory cells and eventually by scar tissue.

Many isolated clinical and experimental observations on cardiac necroses are now scattered throughout the world literature. The object of this monograph has been to coordinate these data, in the light of newly acquired knowledge about the electrolyte-steroid-cardiopathies. It is hoped that such a systematization of knowledge will help to obtain a better insight into the complex relationships between electrolytes, steroids and stress, which are believed to be fundamental for the understanding and prevention of many diseases.

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February, 1959

VOLUME XXVIII

NUMBER 2

Journal of Occupational Medicine

Volume one, number one of the *Journal of Occupational Medicine* is now on the street. To be more exact and less journalistic let the phrase read: The first issue of the Industrial Medical Association's new periodical has now been distributed to the members of that association. The scientific content of this first issue is impressive and presages a long and hearty life.

The arrival of a new sibling in a family is fraught with the possibility of undue concern in older siblings that their security is being challenged. In medical journalism this aspect of human patterns in behavior is not discernible. *Industrial Medicine and Surgery*, as the elder brother in its maturity and momentum, happily welcomes the new arrival. Already in the gestation period of the new journal the older one has profited appreciably through the prospective competition. This long overdue need for competition should serve the interests of both publications. The rapidly expanding world of occupational health provides opportunities for not only two scientific publications in the field, but for several, culminating in time in specialty periodicals within the basic specialty of occupational health. That surge is on its way.

The new journal, now the official organ of the Industrial Medical Association, is of the "immediate family." Its loyalties naturally must be built foremostly around that immediate family. *Industrial Medicine and Surgery*, now having reached maturity, will continue to serve the Industrial Medical Association, its component societies and its members but will seek as its forte the furtherance of occupational health on no circumscribed basis but throughout the world. Having pledged its good will to the *Journal of Occupational Medicine*, the Journal of *Industrial Medicine and Surgery* bespeaks the support of JOM in its enlarging enterprises.

The Labeling of Chemicals

OVER THE LAND many news items have appeared commenting on the American Medical Association's proposal for new legislation for protection in the household and in the work place

against harmful chemicals. Two of these news items, similar in character, here are noted:

The Committee on Toxicology of the American Medical Association has announced that as a result of 15 months' study it has formulated a broad and encompassing model law for the precautionary labeling of hazardous substances in commercial, household and industrial chemical products. The law as drafted would require the labeling of all chemical products containing hazardous substances which are not now regulated; require the same labeling standards to apply to chemicals for export as those for domestic consumption; prohibit reuse of food and drug containers bearing their original labels and require identification labels for strongly sensitizing chemicals which cause allergic or inflammatory reactions in living tissue on contact. A significant departure in drafting the new law was deletion of "poison" from the bill's provisions, because of lack of agreement among scientists on the definition of the term and a wide variation in existing legal limits for poisons. Attention is called to the large number of persons who have died from accidental ingestion of poisons, and it is hoped that widespread adoption of the model law will help parents and others become more aware of the hazards and thereby reduce fatalities.

The second item states: As part of an over-all program to prevent poisonings and to increase public awareness of the hazards of certain chemical products, the AMA's Committee on Toxicology has drafted a broad model law requiring precautionary labeling of hazardous substances in commercial, household and industrial chemicals. The bill is a model for uniform laws to require the declaration of hazardous ingredients and warning statements on the label and in the accompanying literature of chemical products.

The immediate status of this proposed legislation is not known. It is known that opposition has appeared from more than one quarter. Some other agencies, long active in this territory, are claiming interference with measures already underway. Other opposition derives from the chemical formulators who are loathe to be forced to disclose the nature of their wares. Still other opposition springs from the sincere belief of many that legislation for protection in the household against poison cannot be precisely the same as needed measures for protection against industrial chemicals. Stoutly it is asserted that the situation calls for separate and distinct types of protective measures.

Without taking any side as to merits or demerits of the matter, the fact remains that the industrial worker manipulating chemicals rarely knows with what he is working. For that matter, the industrial buyer of many chemicals often times highly useful, seldom knows the constituency of some chemicals to be handled by his employees. Many chemicals are sold under trade names that wholly fail to divulge the nature of the chemical or the extent of its toxic properties. The attending difficulties carry over into the work of the industrial physician and the industrial hygienist. Confronted with suspected intoxication or local damage such as dermatitis, these medical workers seldom may become readily informed as to the nature of the offending agent. It is easy enough to say, "Analyze it." Actually, analyses either are not revealing or are too difficult to be practical. Inquiries directed to the manufacturer may elicit no further information than that the formulation is a trade secret.

Bespeaking better protection of the industrial workers against their chemical affronts, but in no degree denying the need for protection of the household with the children and adults therein, and in particular the poison centers, whose activities chiefly center about household disasters, it is urged that tremendous improvement should be directed to the labeling of industry's harmful chemicals. The proposals of the American Medical Association's Committee on Toxicology indeed may be deficient or at least subject to refinement. Condemnation of the proposals made by the American Medical Association should not lead to abandonment so long as it may be said that improper labeling of industrial chemicals is acting to the detriment of industrial workers.

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OR HABITUAL ABORTION...
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References: 1. Brownlee, George: *A Comparison of the Antipyretic Activity and Toxicity of Phenacetin and Aspirin*, Quarterly J. of Pharmacy and Pharmacology, 10:609-620. 2. Goodman, Louis S. and Gilman, Alfred: *The Pharmacological Basis of Therapeutics*, sec. ed. 1955. 3. Hammes, E. M., Jr.: *Pain-Relieving Drugs*, J. Lancet 79:67, Feb. 1952.

COMMENT AND OPINION

Help Wanted

A severe shortage of industrial physicians and industrial hygiene engineers was reported by ROBERT A. KEHOE, M.D., head of University of Cincinnati's Kettering Laboratory. "There is need for 10 industrial physicians and industrial hygiene engineers for every one now employed, and educational facilities for occupational health training will be highly taxed in coming years," he told recent meeting of American Industrial Hygiene Association in Chicago. "At present, only 25% of the employees of this country receive the benefit of reasonably satisfactory medical and hygiene supervision. Not only must we expand our activities to include the other 75% of the working population, but we must consider the multiplication of hazards that will occur with our developing technology in the next 10 years."

—From *Industrial Relations News*, September 13, 1958.

Industrial Department in General Hospital

The establishment of an occupational or industrial medical department for a large manufacturing plant in conjunction with a community general hospital was urged as a life saving measure at the mid-Atlantic regional meeting of the United States Section, International College of Surgeons, November 18, 1958. J. L. THOMPSON, M.D., chief surgeon of the Weirton Steel Company of Weirton, W. Va., said such an arrangement is admirable for the treatment of major injuries.

"The blood bank, consultants, and other life-saving measures of a general hospital are immediately available," DR. THOMPSON said. "Moving of the severely injured employee is reduced to a minimum. It is believed that this contributes to better treatment and a greater degree of survival and rehabilitation."

He listed as advantages: (1) more adequate service as the result of common use of clinical laboratory, blood bank, and physical medicine facilities; (2) economy in hard-to-get technicians; (3) availability of consultation in radiology, anesthesiology, pathology and other specialties; (4) full time employment of the well trained surgeon, internist, and others by industry is made more attractive; (5) the hospital has the advantage of specialists for consultation and medical staff work; (6) much attention is given to good relations with the practicing physicians in the hospital and community.

DR. THOMPSON spoke from experience in Weirton. The steel plant, employing about 12,000 to 14,000 people, formerly had an industrial medical department to take care of injuries within the plant. The town was without a

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hospital and the more seriously injured had to be moved to other communities, chiefly in Ohio.

"An idea was born and gradually accepted that it might be a good plan to attach or incorporate the company's industrial medical department into a hospital readily accessible and close to the plant," DR. THOMPSON said.

As a result, the Weirton General Hospital, with a capacity of 175 beds, was opened five years ago. The medical staff of the industrial medical department has four full time and one part time physicians, 17 nurses, five secretaries and one medical technical assistant. This staff is employed by the steel company and is not directed by the general hospital administration.

"After five years' experience the arrangements have proved to be more than satisfactory," DR. THOMPSON said.

Mental Ills Attacked

Any cause which costs American industry 3 billion dollars annually is likely to draw much attention, but when it involves human health it assumes even greater importance. Such a cause is reflected by the employee who brings his home problems to work, and is generally referred to as mental illness in industry.

Assuming the proportions of the common cold as an industrial malady, and equally as contagious, emotional problems are being pursued by various organizations and by individual employers. Six firms in the U. S. now employ psychiatrists full time and a growing list of others have them on the payroll part time or on a consulting basis.

Such organizations as the American Management Association, the Industrial Medical Association and the American Medical Association have directed their attention toward curtailing industrial mental illness, which is responsible for 60% to 80% of employee dismissals.

A newly formed group within the ranks of the American Medical Association known as the Joint Committee on Mental Health in Industry met for the first time in November in Chicago. A similar group dedicated to the study of *industrial emotional* illnesses was formed this year within the Industrial Medical Association. Both of these groups are providing badly needed professional help in eradication of the problem.

One of the significant advances in recent years in analyzing the effect of emotional problems on human output is recognition that an employee troubled with personal problems is likely to influence the morale of his co-workers. This is why mental illness in industry is regarded as closely paralleling the contagion of the common cold in lost productive hours.

All of the efforts now turned on emotional problems of all levels of workers in industry are designed to help the individual solve the problems which are making him unhappy, accident-prone, list-

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—From *Medina* (New York) *Journal Register*, November 25, 1958.

Industrial Medicine Building Under Construction

Construction of an 800,000 dollar Industrial Medicine and Hygiene Building began August 18, 1958, at Wayne State University College of Medicine. The building will be completed in the early spring of 1959, according to GORDON H. SCOTT, dean of the College of Medicine.

Research to be conducted in the building will include study of atmospheric pollutants, including radioactive substances and vehicular hazards as they may attend certain occupations.

Arthur J. Vorwald, chairman of the department of industrial medicine and hygiene, said that research projects now in progress totaling 1,500,000 dollars necessitate prompt completion of the new building. The research is supported by funds from the Atomic Energy Commission and the U. S. Public Health Service.

Radiation studies will be conducted on two especially designed and equipped floors of the four-story building. The most modern features for radiation safety control have been incorporated in the building design. A special area for electronic instrumentation will be installed, thereby reducing background levels of radiation to a minimum.

A laboratory for study of exhaust fumes will be on the first floor with a special entrance for automobiles. Another floor will house experimental animals of varying species for a contrast study of effects of polluted and pure air.

Classes for training both undergraduate and graduate students in the radiobiologic sciences will be held in the new building.

—From *Wayne State University College of Medicine Bulletin* Vol. 5, No. 2.

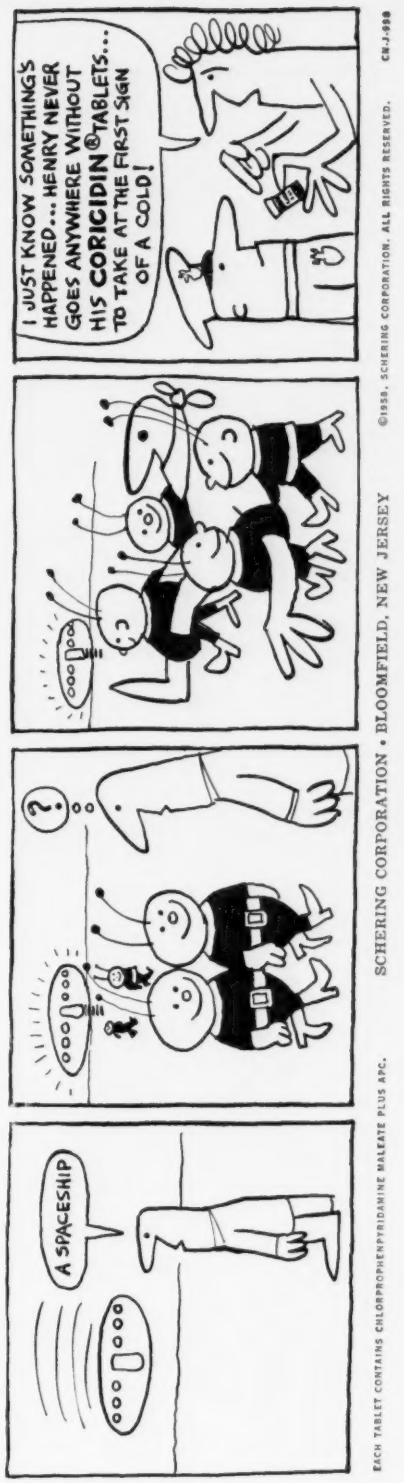
Health Program Cuts Absenteeism

An active and sustained program to help employees become health conscious can sharply reduce the illness rate, THOMAS H. HOGSHEAD, M.D., medical director of Du Pont's engineering department, told members of the American Society of Mechanical Engineers.

At the close of World War II, DR. HOGSHEAD said, a survey of the health of Du Pont engineers disclosed "a critical situation, particularly in the area of cardiovascular disorders. An active health program geared mainly to the prevention of heart trouble and related disorders was put into operation. . . . The health record changed for the better almost immediately."

Following consolidation of the engineering department in a new headquarters building outside Wilmington in 1953, the medical division launched a broad program designed to help employees become health conscious.

As evidence of its success, DR. HOGSHEAD said, "With an average of 2,500 men and women over the five-year period, 1953-1957 . . . our sickness absenteeism is 1.3% of the total hours scheduled for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work. The average for comparable industrial groups is usually some two to three times this figure."

The medical division is equipped to handle an emergency situation, he said, "but our program is geared to prevent emergencies from ever happening. This makes it desirable for us to be in contact with the employees as frequently as possible."

Employees paid an average of 10 visits each to the medical division in 1957, he reported. Services include annual physical examinations which continue a company policy established in 1926, preventive inoculations, and other activities. He emphasized the preventive nature of the program and the encouragement of visits to the medical division at any time the employee wishes.

—From *Wilmington* (Delaware) *News*, December 4, 1958.

Chronic

Drivers with bad accident rates are most likely to be financially irresponsible, horn-honkers, car decorators, psychologically immature and promiscuous. They also have above-average interest in drinking, sports and gambling, according to an article on industrial accidents in the December 1958 *Industrial Bulletin*, the monthly magazine published by the New York State Department of Labor.

This is the finding of WILLIAM A. TILLMAN, M.D., of the University of Western Ontario, who made a study of the personalities of taxi-cab drivers and ordinary drivers. By evaluating a complex of factors, DR. TILLMAN concluded that "A person drives as he lives."

In another article, FLANDERS DUNBAR, M.D., psychiatrist, asserts that some people are markedly susceptible to accidents, just as others are to the common cold. Their "affliction," she notes, today outranks cardiovascular disease as a destroyer of the working years. DR. DUNBAR holds that a first accident should be treated as if it were a first coronary attack and as carefully analyzed.

In the same issue, ISADOR LUBIN, M.D. Industrial Commissioner, says that the New York State Labor Department's consultative safety program sharply cut the rate of injuries in those industries to which it has been applied. Overall, about one of every five previous injuries has been eliminated. This rate of decline is ten times as great as that in firms not using the new safety program.

Dermatology

RICHARD J. STEVES, M.D., reported at the first Iowa Industrial Health Conference, December 5, 1958, "Skin disorders now make up 60% of all medical disorders reported to industrial compensation boards in the United States, and they will continue to increase." DR. STEVES said the employer can prevent, to a degree, chemical irritations by selecting dark complexioned men for work with solvent solutions and light complexioned men for work with grease or oil solutions.

—From *Des Moines* (Iowa) *Tribune*, December 8, 1958.

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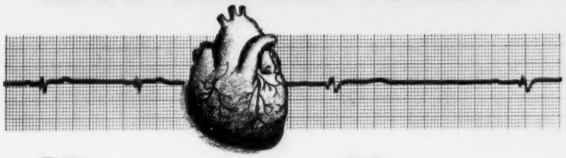

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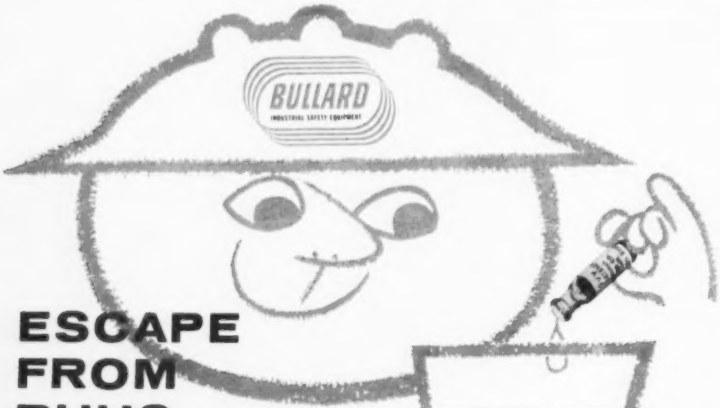

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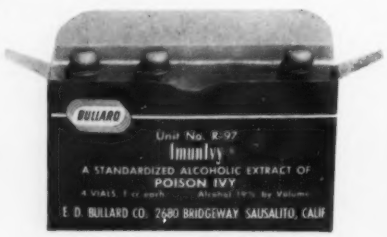

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Medical Director: Degree, Tufts Med Schl; has served over 10 yrs as Med Dir, various organizations; seeks interesting work, indus field; will consider Insurance Med.

Medical Director: Diplomate, Surgery; 2 yrs U.S. Medical Corps; 3 yrs, staff phy, lge co; 6 yrs, Head of Dept, lrge co; — 1 yr, Indus phy, lrge chem co; seeks Indus posi w/oppr advance (no Ob); prefers Texas or surrounding States; Age 39.

Medical Director: MPH; Certified Occupational Med; 3 yrs, private pract; 4 yrs, Capt, Med Corp; sevl yrs, assoc Exam'g Phys, Hlth Dept; 2 yrs, lge corp, Med Dir; seeks East locality — prefers N.Y., N.J., or Conn.

Medical Director: 4 yrs, medical ofc, USAC; past ten yrs, Asst Med Dir, very lge co — good posi, but offers no advancemt; seeks Med Dirshp, lge eastern corp; Middle 40's; Diplomate, Preventive Medicine.

Assistant Medical Director: 2 yrs, Med Ofc. US Army; 8 yrs, Genl Pract; 2½ yrs, Asst Clinical Director, impor eastern co; wishes position having challenge, advancement; seeks New York City area.

Staff Physician: Emphasis on Allergy; 3 yrs, plant & staff phy, Board of Publ Hlth; 5 yrs, Asst, Med Schl Allergy Clinic & Med Examiner, numerous insur co's; Board Qual'd, Allergy; Academy Member; late 30's; lic'd N.Y., N.J., Calif; any locality; immediately available.

Staff Physician: Presently Fellow, Radiology & Hematology; working toward Cert'n, Rad; seeks Indus Med with oppor research & eventually part-time teaching; prefers So, Southwest; early 30's.

Staff Physician: Interested Indus post leading to Med Dirshp; 10 yrs, priv, genl, practice includ'g 7 yrs as Med Examiner, lge electric Mfgr co; capable genl & ortho surg; any locality; early 40's.

Staff Physician: Graduate, Rush Med; 13 yrs, very successful private genl & Surg pract; Member, AAGP; sevl yrs, flight surg, USAF; prefers Indus Med w/regular hrs; no locality preference; middle 40's.

Staff Physician: Grad, Hahneman Medical; 5 yrs, priv pract; 2½ yrs, hsp phy & psy; 3½ yrs, phy—some publ hlth wk; seeks Indus posi; desires Ohio; perhaps foreign appt; late 30's.

Staff Physician: 1½ yrs, Chief x-ray lab, U.S. Army; 7 yrs, Med Serv Staff, very lge hsp; seeks oppor for advancmt; prefers New York location; middle 30's.

Staff Physician: 2 yrs, Med Ofc, USAF; 1 yr, priv pract; 2 yrs, Asst Phy, impor foundation hosp; 1½ hrs, genl clinic pract; seeks indus med post in Fla, Ala or Georgia only; Age 37.

These are but a few of the many well-qualified men in our files seeking industrial medicine posts. If you wish to reorganize or augment your present medical staff, please write us for the names of men immediately available, qualified to head departments or act in staff capacities.

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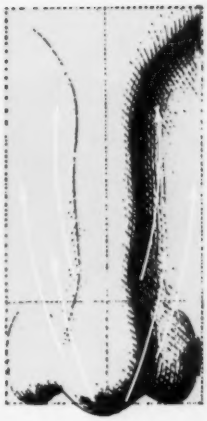

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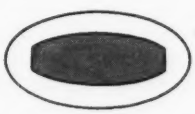	
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References: Annals of Allergy, Vol. 6. July-August 1948. Study of a New Histamine Antagonist, The Pennsylvania Med. J., Vol. 51. Clinical Study of a New Antihistaminic Drug—Phenindamine. Dristan Clinical Study.

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Reference: 1. J.A.M.A. 158:386 (June 4) 1955.

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*Monographs on Therapy 3:137 (Nov.) 1958

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